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INSTRUMENTS
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Temperature and Humidity

Temperature

Humidity

Digi-Sense®
Dataloggers

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Market Engineering Award Recipient
2003

New Products from Oakton Instruments

Oakton® Food Safety IR Thermometer

- A combination contact/non-contact thermometer
- Instantly spot unsafe food temperatures
- Quickly scan surface temperatures without the risk of cross-contamination
- Designed for HACCP temperature monitoring

See page 27 for more information

Digi-Sense® Type K Thermometer

- Three-button design—simple and easy to use
- Sealed membrane keypad for easy cleanup
- Large display is easy to read

See page 5 for more information

Digi-Sense® IR Thermometer with Type K Input

- Non-contact infrared measurement mode quickly scans surfaces
- Accepts type K contact probes for internal measurements
- Features Min/Max, high/low limit alarms, laser pointer, backlit display, adjustable emissivity, and more!

See page 25 for more information

Digi-Sense® Palm-Sized IR Thermometer

- Easily fits in your hand or pocket
- Laser pointer pinpoints your measurement area
- Economically priced

See page 25 for more information

Digi-Sense® Thermohygrometers

- Simultaneously displays humidity, temperature, and dew point—no need to switch screens
- IP54 rating provides for splash- and dust-resistant protection
- Four-button design provides easy operation

See page 19 for more information

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All Metrology services are performed in an ISO/IEC 17025 accredited laboratory. Calibration certificates are NIST-traceable unless otherwise stated. Accredited certificates with calculated uncertainty measurements by test point are also available for many instrument parameters. Please contact us at 888-4OAKTON for details.

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InnoCal®, service provider for Oakton Instruments, is pleased to offer innovative solutions to satisfy your calibration and repair needs. Trust InnoCal to provide the documentation required to meet ISO, FDA, USDA, EPA, GLPs/GMPs, and other quality standards. Have equipment tested to ensure its accuracy or serviced to maintain optimal performance today!

NIST-Traceable Calibration Certificates

Order the catalog numbers listed below to have calibration certificates provided with your new equipment purchase or schedule this service on previously purchased instruments by requesting a return authorization (RA) number.

Our detailed certificates identify the instrument by model number, serial number, and company name. "As found/as left" test data, test procedures, calibration date, and technician number are also included.

Repair Service

Keep valuable equipment up and running with scheduled preventive maintenance and repair. Our experienced Service Technicians are factory trained on instrumentation theory and operation, and stay up to date on the latest product modifications.

NIST-Traceable Certificates

NIST-traceable certificate for:	Certification test points	Catalog number
Humidity instrument	Three humidity test points (30, 60, and 80% RH) and one temperature test point (22 to 25°C)	WD-17030-20
Recorder, chart	Ten to fourteen test points (depends on range of recorder) volts (AC/DC) and amps (AC/DC)	WD-17100-00
Recorder, X-Y	Ten to fourteen test points (depends on range of recorder) volts (AC/DC) and amps (AC/DC)	WD-17100-10
Recorder, temperature/humidity	Three humidity test points (30, 60, and 80% RH) and one temperature test point (22 to 25°C)	WD-17030-20
Recorder, temperature	Use temperature certification catalog numbers from temperature table below	—
Timer/Stopwatch	Test data supplied in average seconds/day	WD-17060-00

NIST-Traceable Temperature Certificates

Thermometry type	Certification test points† against NIST-traceable standards	Instrument Catalog number	Probe Catalog number	System (meter+probe) Catalog number
J thermocouple	Four test points at 0, 100, 230, 410°C (32, 212, 446, 770°F)	WD-17000-10	WD-17001-10	WD-17002-10
K thermocouple	Four test points at 0, 100, 230, 410°C (32, 212, 446, 770°F)	WD-17000-12	WD-17001-12	WD-17002-12
T thermocouple	Four test points at –20, 0, 100, 230°C (–4, 32, 446, 770°F)	WD-17000-02	WD-17001-02	WD-17002-02
E thermocouple	Four test points at 0, 100, 230, 410°C (32, 212, 446, 770°F)	WD-17000-14	WD-17001-14	WD-17002-14
RTD	0, 100, 165, 230°C (32, 212, 329, 446°F)	WD-17000-04	WD-17001-04	WD-17002-04
Thermistor	Three test points at 0, 40, 70°C (32, 104, 158°F)	WD-17000-06	WD-17001-06	WD-17002-06
Infrared	50, 100, 200, 230°C (122, 212, 392, 446°F)	WD-17004-00	WD-17004-10	WD-17004-20

†If instruments and/or probes cannot achieve the listed temperature, InnoCal will substitute other test points at our discretion.

Technical Information

Thermocouples

What is a thermocouple? Thermocouple sensors consist of two dissimilar metals, joined to produce a specific voltage at a given temperature. This voltage is then measured and interpreted by a thermocouple thermometer, and then displayed for a user to view. There are many types of thermocouples, which are made of different types of materials. Some of the more common types are J, K, and T.

Why choose a thermocouple? Choosing the correct thermocouple type depends on the applications' required temperature range and accuracy. Thermocouples are used in most general-purpose applications when precise accuracy is not a top priority. They offer a wide temperature range and come in a large variety of configurations.

Thermistors

What is a thermistor? Thermistors are thermally sensitive resistors which change electrical resistance due to temperature changes. They have very predictable characteristics and offer long-term stability.

Why choose a thermistor? Thermistors have excellent accuracy over the biological or ambient temperature ranges when compared to thermocouples or RTDs. Response times are generally faster than other types of probes. But, thermistors have a limited temperature range that usually cannot exceed 300°F (150°C).

Infrared Thermometers

When choosing an infrared thermometer, consider the temperature range required, size, material, environment, distance of the measured object, and its spectral response. Portable infrared thermometers are most often used for preventative maintenance, troubleshooting, and quality control. Infrared temperature measurement is ideal for objects that:

- Are too far or too difficult to reach
- Require non-contamination from one reading to the next
- Are moving, rotating, or vibrating
- Have high temperatures up to 1400°F (760°C)
- Are scratched or damaged if contacted
- Have curved, distorted, or varying surface conditions

How do Infrared Thermometers Work?

All objects emit infrared energy. The hotter an object is, the more active its molecules are, and the more infrared energy it emits. An infrared thermometer houses optics that collect the radiant infrared energy from the object and focus it onto a detector. The detector then converts the energy into an electrical signal, which is amplified and displayed.

Emissivity: An object's ability to emit or absorb energy. Perfect emitters have an emissivity of 1. An object with an emissivity of 0.8 will absorb 80% and reflect 20% of the incident energy. Emissivity may vary with temperature and spectral response (wavelength).

Distance-to-target-size ratio: The infrared thermometer focuses infrared energy from an object onto its detector at this ratio. For example, a 4:1 distance-to-target-size ratio means that the infrared thermometer will read a 1" dia area from 4" away. The object must fill the entire area for accurate readings.

RTDs

What is an RTD? RTD stands for Resistance Temperature Detector. This is the sensing technology that measures temperature by measuring the change in electrical resistance across two metal wires. The resistance value is then measured and interpreted by an RTD thermometer, and displayed for a user to view. While RTD wire can be made of any metal, platinum is the metal of choice due to its excellent repeatability, stability, and resistance to corrosion and chemicals. RTDs are more accurate and stable than thermocouples, but cannot be used to measure extremely high temperatures. Compared to thermistors, RTDs are more rugged and can measure higher temperatures

Why choose an RTD? RTDs are more accurate and stable than other sensors, such as thermocouples, but they cannot be used to measure extremely high temperatures. Choose an RTD sensor when accuracy and repeatability are important, as long as you do not need to measure extreme temperatures.

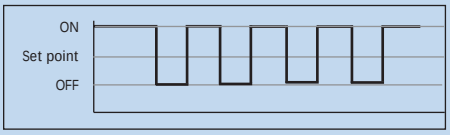
Controllers

Temperature controlled systems comprise four essential elements that are joined to form a closed loop.

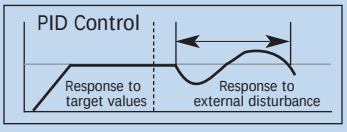
1. **Load:** Object which is required to be maintained at a constant and specified temperature.
2. **Heater or cooler:** Provides heating or cooling to the system
3. **Sensor:** Measures the temperature of the system and feeds the information back to the controller.
4. **Controller:** Compares the information it receives from the sensor (PV, or process value) with the desired temperature (SP, or set value). It then adjusts the power (MV, or manipulated variable) that is fed to the heater or cooler, to compensate for any tendency of the load temperature to drift up or down, closing the loop.

Types of Controllers

On/Off control: A simple control system in which the heater or cooler is completely off as the temperature rises through the set point, and on as the temperature falls through the set point. This type of control continuously hunts around the set point, and should only be considered when the control requirements are not critical.



PID control: Proportional-Integral-Derivative control. When more stable control is required, it is necessary to slow down the rate of temperature rise when approaching the set point in order to avoid overshoot. PID control provides precise control and should be used for systems that may have frequent and unexpected disturbances.



Digi-Sense® Standard Thermocouple Thermometers

Easy-to-use, four-button design

Heavy-duty housing with bright, easy-to-read display

IP54-rated case provides splash and dust resistance

UL listed intrinsically safe for hazardous locations

These thermometers feature a rugged ABS/polycarbonate plastic case with a sealed silicone rubber keypad for an IP54 rating. Tapered casing design allows for easy one-handed gripping, while maintaining a large, easy-to-read display. Seven-segment character LCD for easy readability and viewing. Large, positive-action buttons are easy to press. Calibration function ensures accuracy and correct temperature measurement at every use. To calibrate meter, simply place probe in a container packed with ice, fill with water, and press the CAL button; meter automatically recognizes the freezing point.

Use the Hold function to freeze readings for later viewing. The built-in tilt stand enables hands-free operation. Select between °F/°C scales. Auto-shutoff helps to save on battery life. Low-battery indication provides power-failure warning. Large, ½" high screen is easy to read, even from a distance. Rear foam padding helps to hold the meter in place on flat and angled surfaces and prevents slipping.

UL listed intrinsically safe for Class I, Groups A, B, C, and D, Division 1 hazardous locations. Meters operate on two AA batteries (included) and accept one type J, K, or T thermocouple probe with mini-connector. Probe is not included; order separately at right or see pages 7-10 for a complete selection.

What's included: two AA batteries.

60010-00 60010-10 60010-20

Specifications & Ordering Information

Accuracy: ±0.2% of reading ±0.9°F (0.5°C); above –99.9°F/°C
±0.25% of reading ±2°F (1°C); below –99.9°F/°C
Resolution: 0.1°F/C from –99.9 to 299.9°F/C, 1°F/C outside this range
Display: 4-digit LCD with ⅜" (10 mm) high numerals
Display update rate: every 0.5 second
Power: two AA batteries (included)
Dimensions: 3¼"W x 6¼"H x 1¼"D (8.4 x 15.8 x 3 cm)

ISO9001:2000 CERTIFIED SUPPLIER · ITS-90 · CE · IP54 · UL · Ex · 3 year warranty

Catalog number	Description	Temperature range
WD-60010-00	Type J thermometer	–328 to 1832°F (–200 to 1000°C)
WD-60010-10	Type K thermometer	–418 to 2501°F (–250 to 1372°C)
WD-60010-20	Type T thermometer	–418 to 752°F (–250 to 400°C)

Measure internal temperatures

Accessories

WD-08517-55 General-purpose type J probe; 316 SS with 5-ft coiled cable

WD-08516-55 General-purpose type K probe; 316 SS with 5-ft coiled cable

WD-08500-55 General-purpose type T probe; 316 SS with 5-ft coiled cable

WD-08520-05 Carrying case for storage, canvas cloth, holds one meter and probe, with belt-loop clip

WD-91100-90 Carrying case for in-field use, splash-proof vinyl, holds one meter and probe, with belt-loop clip

INNOCAL® INNOVATIVE CALIBRATION SOLUTIONS

NIST TRACEABLE

Ensure the accuracy of your thermocouple meter, probe, or system!

Calibration to a NIST-traceable standard helps you meet ISO, FDA, USDA, and EPA guidelines. Our ISO/IEC 17025-accredited metrology laboratory will pretest and calibrate thermocouple equipment. Service includes NIST-traceable calibration certificate with before and after test data at four temperature test points. See page 1 for ordering information.

Digi-Sense® Advanced Thermocouple Thermometers

Dual inputs for temperature differential measurements

Multi-data display shows both temperatures and temperature differential simultaneously

Measure up to 3272°F (1800°C)

Memory stores readings with real time and date stamps

These heavy-duty thermometers feature a rugged ABS/polycarbonate, splash- and dust-resistant plastic case with a sealed silicone rubber keypad for an IP54 rating. Large, positive-action buttons are easy to press. Tapered casing design allows easy one-handed gripping, while maintaining a large, easy-to-read display. Take single, dual, or differential temperature measurements. Record those readings for later documenting or analysis. The multi-data seven-segment character LCD simultaneously indicates the reading of each probe, as well as the differential reading.

Calibration function ensures accuracy and correct temperature measurement at every use. To calibrate the meter, simply place the probe in a container packed with ice, fill with water, and press the CAL button; meter automatically recognizes the freezing point.

Use the Hold function to freeze readings for later viewing. Min/Max button displays the lowest/highest measurement since the meter was powered on. The built-in tilt stand enables hands-free operation. Select between °F/°C scales. Auto-shutoff helps to save on battery life. Low-battery indication provides power-failure warning. Back foam padding helps to hold the meter in place on flat and inclined surfaces and prevents slippage. Uses two AA batteries (included).

Dual J-T-E-K® model takes single, dual, or differential temperature measurements. Nonvolatile memory stores up to 25 sets of readings. 0.1°/1° scalable resolution. Accepts one or two thermocouple type J, T, E, or K probes with miniconnectors. Probe(s) not included; order separately at right, or see pages 7-10 for a complete selection.

DuaLogR® model has all the same features listed above, but also includes datalogging capability to log and document up to 1000 measurements on-site at any location. The data can be downloaded to your computer using the optional RS-232 interface (sold separately) and saved in a spreadsheet program. The data is time and date stamped to help with data-trending and analysis. Logging interval can be stored by manually pressing the LOG button, or can be set to log automatically every one second to 60 minutes. The 1" tall LCD screen with triple, four-digit display shows the current, minimum, and maximum measurements.

Continuous operation possible with optional AC adapters (order separately). Accepts one or two thermocouple type J, K, T, E, R, S, N, or B probes with miniconnectors. Probe(s) not included; order separately at right, or see pages 7-10 for a complete selection.

What's included: two AA batteries.

Specifications

Input type and range

J	–328 to 1832°F (–200 to 1000°C)
K	–418 to 2501°F (–250 to 1372°C)
T	–418 to 752°F (–250 to 400°C)
E	–418 to 1832°F (–250 to 1000°C)
R	32 to 3214°F (0 to 1768°C)
S	32 to 3214°F (0 to 1768°C)
N	–418 to 2372°F (–250 to 1300°C)
B	392 to 3272°F (200 to 1800°C)

Accuracy: ±0.1% of reading ±0.7°F (0.4°C) above –238°F (–150°C); ±0.25% of reading ±2°F (1°C) below –238°F (–150°C)
Resolution: 0.1/1°C below 1000°F/C, 1° outside this range
Display: three 4-digit LCD with ⅜" (10 mm) and ¼" (7 mm) high numerals
Display update rate: every 0.5 second
Power: two AA batteries (included)
Dimensions: 3¼"W x 6¼"H x 1¼"D (8.4 x 15.8 x 3 cm)

ISO9001:2000 CERTIFIED SUPPLIER

Ordering Information

Catalog number	Description	Input types
WD-60010-40	Dual J-T-E-K thermocouple thermometer	J, T, E, K
WD-60010-50	DuaLogR thermocouple thermometer	J, T, E, K, R, S, N, B

Accessories

WD-08517-55 General-purpose type J probe; 316 SS with 5-ft coiled cable

WD-08516-55 General-purpose type K probe; 316 SS with 5-ft coiled cable

WD-08500-55 General-purpose type T probe; 316 SS with 5-ft coiled cable

WD-08520-05 Carrying case for storage, canvas cloth, holds one meter and probe, with belt-loop clip

WD-91100-90 Carrying case for in-field use, splash-proof vinyl, holds one meter and probe, with belt-loop clip

WD-91100-52 Adapter, 115 VAC, compatible with DuaLogR model only

WD-91100-55 Adapter, 230 VAC, compatible with DuaLogR model only

WD-91100-85 RS-232 Interface connects to your computer's 9-pin serial port for easy uploading of data. Use with most popular RS-232 programs including Windows®. Compatible with DuaLogR model only

WD-10374-50 Infrared printer is ideal for on-site documentation. Transfer data using infrared light without the use of cables—just position printer within 12" (30.5 cm) of the top of the thermometer. Set print interval rate from once every three seconds to once every 60 minutes. Includes one roll of paper and four AA batteries. Compatible with DuaLogR model only

WD-10374-52 Replacement printer paper, pack of 6 rolls

Acorn® Temp J-K-T Thermocouple Thermometer

Splash-resistant sealed membrane keypad makes cleanup easy

Displays minimum and maximum readings
Rubber boot protects meter from damage
Large, ⅞" tall display is easy to read
°F/°C selectable

This thermometer is perfect for any lab or messy area where easy cleanup is important. Min/Max button shows the lowest/highest temperature since the meter was turned on. Hold function freezes measurement reading for viewing. Calibration feature allows user to calibrate meter at almost any location—just place the probe in a bucket of ice water and press the CAL button. Positive-action keys with audible clicks are easy to press. Built-in stand and continuous mode operation allow meter to be used for benchtop use; or use power saver mode to turn meter off automatically after 17 minutes and save on battery life. Low-battery indication, °F/°C selectable, and protective rubber boot with stand included. Accepts one type J, K, or T thermocouple probe with miniconnector. Probe not included; order separately at right, or see pages 7-10 for a complete selection.

What's included: protective rubber boot and four AAA batteries.

Specifications

Input type and range
- J –328 to 1832°F (–200 to 1000°C)
- K –418 to 2501°F (–250 to 1372°C)
- T –418 to 752°F (–250 to 400°C)

Accuracy: ±0.25% of reading plus 0.9°F (0.5°C) above –99.9 °F/C; ±0.25% of reading plus 2°F (1°C) below –99.9°F/C
Resolution: 0.1 °F/°C from –99.9 to 299.9 °F/°C; 1 °F/°C outside this range
Display: 4-digit LCD with ⅜" (14 mm) high numerals
Display update rate: Every 0.5 seconds
Power: four AAA batteries (included)
Dimensions: 2¾"W x 5¾"H x 1¼"D (7 x 14.5 x 3.5 cm)

Ordering Information

Catalog number	Description
WD-35627-00	Temp J-K-T thermometer

Accessories

WD-08517-55 General-purpose type J probe; 316 SS with 5-ft coiled cable

Temp-T thermometer

ISO9001:2000 CERTIFIED SUPPLIER

CE

3 year warranty

Meter includes protective rubber boot.

Digi-Sense® Economical Thermometer

Simple to operate, three-button design

Accepts type K thermocouple probe
Hold function freezes display's value
°F/°C selectable

This type K thermocouple meter is perfect for any basic temperature measurement application. The seven-segment, ⅞" high display is easy to read, even at a distance. Splash-resistant membrane keypad is easy to clean and wipe down. Auto power-off feature turns meter off after 17 minutes after the last key press to save on battery life. Meter can be calibrated in the field. Low-battery indicator. Accepts any type K thermocouple with miniconnector; probe not included (sold separately below or see pages 7-10 for a complete selection.) .

08439-62 probe

Specifications and Ordering Information

Range: –418 to 2501°F (–250 to 1372°C)
Accuracy: ±0.25% of reading plus 0.9°F (0.5°C) above –99.9°F/C, ±0.25% of reading plus 2°F (1°C) below –99.9°F/C
Resolution: 0.1°F/C from –99.9 to 299.9°F/C; 1°F/C outside this range
Display: 4-digit LCD with ⅜" (14 mm) high numerals
Display update rate: every 0.5 second
Power: four AAA batteries (included)
Dimensions: 2¾"W x 5¾"H x 1¼"D (7 x 14.5 x 3.5 cm)

CE 3 year warranty

Catalog number	Description
WD-93000-00	Economical type K thermometer

WD-08439-62 General-purpose type K probe; 30455 with short PVC handle
WD-35627-80 Protective rubber boot with stand
WD-08520-05 Carrying case for storage, canvas cloth, holds one meter and probe, with belt-loop clip

Digital Pocket Thermometer

Quickly verify temperatures

Dishwasher safe

This thermometer has a water-resistant sealed case—ideal for use with liquids. Features °F/°C selection, Min/Max button, and a 4"L stainless steel tapered probe for penetration into most semi-solid and liquid substances. Includes a plastic protective sleeve with pocket clip and a battery.

Specifications & Ordering Info

Range: 14 to 392°F (–10 to 200°C)
Dimensions
Probe: 4⅜"L x ⅜" dia
Head: 1⅞" dia

CE 1 year warranty

Catalog number	Description
WD-90003-00	Digital pocket thermometer

Digi-Sense® Type J, K, and T Thermocouple Thermometry Kits

Each kit includes thermometer, probes, and carrying case—everything you need for field measurements

Part of the extensive Digi-Sense family, these kits contain everything you need in one convenient case! Choose your kit with either type J, type K, or type T thermocouple meters and probes. All the Digi-Sense thermocouple thermometer kits include probes with miniconnectors. All probes (except the clip-on oven and Velcro® surface probes) have integral handles with a 5-ft coiled cable.

A General-Purpose Type J Kit is ideal for almost any application. Measure the temperatures of semi-solids, liquids, gases, and surfaces. Kit includes type J thermocouple thermometer 60010-00 and three probes.

B General-Purpose Type K Kit is ideal for any application requiring higher temperature measurements. Measure the temperatures of semi-solids, liquids, gases, and surfaces. Kit includes type K thermocouple thermometer 60010-10 and three probes.

C Food Service Kit measures the temperature of foods, liquids, ovens, and grills. Kit includes type T thermocouple thermometer 60010-20 and four probes. The general-purpose probe measures the temperature of semisolids, liquids, and gases. The penetration probe with hypodermic tip, 316 SS handle, and a 4-ft straight armored cable is ideal for meat temperatures. Use the surface probe with a 3-ft, 304 SS braid over fiberglass-insulated wire for your grill and warming surface temperatures. The clip-on probe with a 10-ft, 304 SS braid over fiberglass-insulated wire is perfect for checking oven temperatures.

D HVAC Kit measures the temperatures of air, gases, piping, tubing, and confined areas. HVAC kit includes Dual J-T-E-K® thermocouple thermometer 60010-40 and three probes. Use air/gas probe for your air and gas measurements; surface probe with 0.25" diameter for confined area measurements; and Velcro strapped with 10-ft straight PVC cable for your tubing and pipe measurements (fits pipe or tubing diameters from 0.75" to 2.75").

A

60010-05

B

60010-15

C

60010-25

D

60010-45

Measure heating/ cooling registers

Hard plastic, foam-lined carrying case

ISO9001:2000 CERTIFIED SUPPLIER · CE · 3 year warranty meter only · ITS-90 · IP54 · UL · Ex

Specifications & Ordering Information

	Catalog number	Kit includes								
		Meter			Probes (for complete probe specification see the referenced page)					
Key	Kit	Model no.	Description	Page	Model no.	Description	Type	Temperature range	Length	Page
A	WD-60010-05	60010-00	Digi-Sense Type J	3	08517-55	General-purpose	J	–310 to 1400°F (–190 to 760°C)	4.4"L	7
					08517-75	Air/gas	J	–310 to 572°F (–190 to 300°C)	8.1"L	8
					08517-60	Surface	J	–310 to 1200°F (–190 to 649°C)	9.9"L	9
B	WD-60010-15	60010-10	Digi-Sense Type K	3	08516-55	General-purpose	K	–418 to 1652°F (–250 to 900°C)	4.4"L	7
					08516-75	Air/gas	K	–418 to 572°F (–250 to 300°C)	8.1"L	8
					08516-60	Surface	K	–418 to 1200°F (–250 to 649°C)	9.9"L	9
C	WD-60010-25	60010-20	Digi-Sense Type T	3	08505-63	General-purpose	T	–418 to 650°F (–250 to 343°C)	8"L	7
					93607-24	Penetration	T	–418 to 700°F (–250 to 371°C)	4"L	8
					08525-66	Surface	T	–418 to 750°F (–250 to 399°C)	4.75"L	9
					08468-24	Clip-on oven	T	–418 to 650°F (–250 to 343°C)	2"L	—
D	WD-60010-45	60010-40	Digi-Sense Dual J-T-E-K	4	08516-75	Air/gas	K	–418 to 572°F (–250 to 300°C)	8.1"L	8
					08516-62	Surface	K	–418 to 1200°F (–250 to 649°C)	8"L	9
					08469-82	Velcro® surface	K	–418 to 212°F (–250 to 100°C)	8"L x 1"W	—

General-Purpose Probes

Industrial handle, rugged connector, and 5-ft coiled cord included!

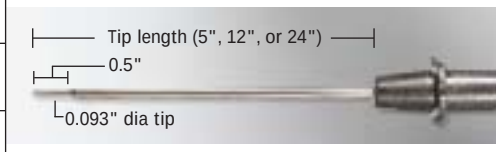
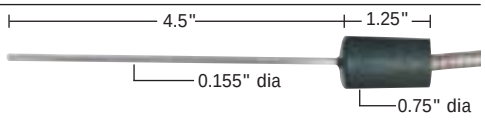
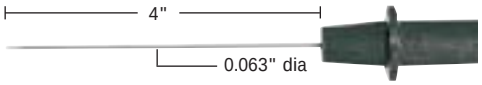
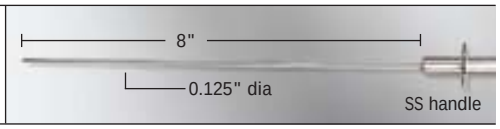
These thermocouple probes were designed to measure any general-purpose or liquid immersion application. All thermocouple probes include a 5-ft PVC coiled cord with strain relief that protects from repeated flexing and tugging. Ergonomic, easy-grip 5"L glass-filled nylon handle (unless noted below) provides maximum heat insulation and impact resistance. Fingerstops on handle prevent probe from rolling and fingers from sliding when inserting probe into hard materials. The 316 stainless steel sheath (shaft casing) provides durability, strength, and maximum abrasion resistance. Rugged th plastic miniconnector is compatible with all Digi-Sense and Acorn® thermocouple thermometers. Connectors and coiled cord are color-coded based on type: type J black, type K yellow, and type T blue.

Miniconnector

Standard nylon handle

General-purpose probe 08516-55

Specifications & Ordering Information

Catalog number	Type	Temperature range	Features	Tip length	Photo/Dimensions†
Standard probes					
WD-08517-55 WD-08516-55 WD-08500-55	J K T	–310 to 1400°F (–190 to 760°C) –418 to 1650°F (–250 to 899°C) –418 to 752°F (–250 to 400°C)	Junction: grounded Response time: 15 sec (liquids) 316 SS sheath; nylon handle	5"	
WD-93756-03 WD-93756-23 WD-93756-63	J K T	–310 to 1400°F (–190 to 760°C) –418 to 1650°F (–250 to 899°C) –418 to 752°F (–250 to 400°C)		12"	
WD-93756-04 WD-93756-24 WD-93756-44	J K T	–310 to 1400°F (–190 to 760°C) –418 to 1650°F (–250 to 899°C) –418 to 752°F (–250 to 400°C)		24"	
Low-cost probes					
WD-08439-60 WD-08439-62 WD-08439-64	J K T	–310 to 1400°F (–190 to 760°C) –418 to 1650°F (–250 to 899°C) –418 to 752°F (–250 to 400°C)	Junction: grounded Response time: 30 sec (liquids) 304 SS sheath; PVC short handle	4.5"	
Small-diameter standard probes					
WD-08505-55 WD-08505-56 WD-08505-57	J K T	–310 to 1300°F (–190 to 704°C) –418 to 1500°F (–250 to 816°C) –418 to 650°F (–250 to 343°C)	Junction: grounded Response time: 10 sec 316 SS sheath; nylon handle	4"	
All stainless steel probes					
WD-93600-02 WD-93600-22 WD-93600-42	J K T	–310 to 1400°F (–190 to 760°C) –418 to 1650°F (–250 to 899°C) –418 to 752°F (–250 to 400°C)	Junction: grounded Response time: 30 sec 316 SS sheath; 316 SS handle	8"	

*Overall probe sheath lengths may vary up to ±0.25".

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

Ensure the accuracy of your thermocouple probe, meter, or system!

Calibration to a NIST-traceable standard helps you meet ISO, FDA, USDA, and EPA guidelines. Our A2LA-accredited metrology laboratory will pretest and calibrate your thermocouple equipment. Service includes NIST-traceable calibration certificate with before and after test data at four temperature test points. See page 1 for ordering information.

Digi-Sense® Penetration and Air/Gas Probes

Industrial handle, rugged connector, and 5-ft coiled cord included!

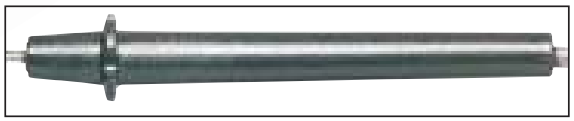
Probes include a 5-ft PVC coiled cord with strain relief that protects from repeated flexing and tugging. Ergonomic, easy-grip 5"L glass-filled nylon handle (unless noted below) provides maximum heat insulation and impact resistance. Fingerstops on handle prevent probe from rolling and fingers from sliding when inserting probe into hard materials. The 316 stainless steel sheath (shaft casing) provides durability, strength, and maximum abrasion resistance. Rugged thermoset plastic miniconnector is compatible with all Digi-Sense and Acorn® thermocouple thermometers. Connectors and coiled cord are color-coded based on thermocouple type: type J black, type K yellow, and type T blue.

A Penetration Probes offer a pointed tip style for penetration into hard and semisolid materials. Sturdy stainless steel tip casing prevents tip from bending when inserting.

B Air/Gas Probes are designed with a perforated shield which allows air and other gases to flow into the sensor for quick readings. Metal shield also absorbs radiated heat and minimizes sensor error. Our sensors are encased in ceramic mineral (MGO) insulation to provide stability, and shock and vibration resistance.

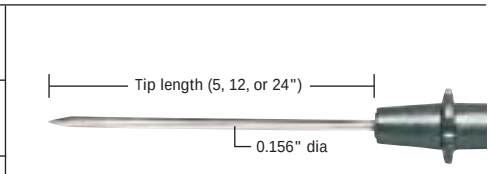
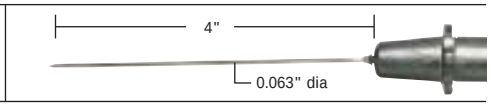
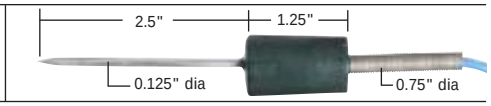
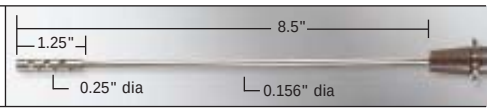
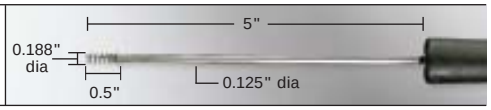
Standard penetration probe 08516-65

Miniconnector



Standard nylon handle

Specifications & Ordering Information

Catalog number	Type	Temperature range	Features	Tip length	Dimensions
A Penetration probes					
Standard probes					
WD-08517-65	J	–310 to 1400°F (–190 to 760°C)	Junction: grounded	5"	
WD-08516-65	K	–418 to 1650°F (–250 to 899°C)	Response time: 25 sec (liquids)		
WD-08500-65	T	–418 to 752°F (–250 to 400°C)	304 SS sheath; nylon handle		
WD-93601-22	J	–310 to 1400°F (–190 to 760°C)	Junction: grounded	12"	
WD-93601-24	K	–418 to 1652°F (–250 to 900°C)	Response time: 50 sec		
WD-93601-26	T	–418 to 700°F (–250 to 371°C)	316 SS sheath; nylon handle		
WD-93601-42	J	–310 to 1400°F (–190 to 760°C)	Junction: grounded	24"	
WD-93601-44	K	–418 to 1652°F (–250 to 900°C)	Response time: 50 sec		
WD-93601-46	T	–418 to 550°F (–250 to 287°C)	316 SS sheath; nylon handle		
Small-diameter probes with hypodermic tip					
WD-93601-02	J	–310 to 1300°F (–190 to 704°C)	Junction: grounded	4"	
WD-93601-04	K	–418 to 1500°F (–250 to 816°C)	Response time: 15 sec		
WD-93601-06	T	–418 to 650°F (–250 to 343°C)	316 SS sheath; nylon handle		
Low-cost probes					
WD-08439-80	J	–310 to 1400°F (–190 to 760°C)	Junction: grounded	4.5"	
WD-08439-82	K	–418 to 1650°F (–250 to 899°C)	Response time: 25 sec (liquids)		
WD-08439-84	T	–418 to 752°F (–250 to 400°C)	316 SS sheath; PVC short handle		
B Air/gas probes					
Standard probes					
WD-08517-75	J	–310 to 1000°F (–190 to 537°C)	Junction: exposed; isolated	8.5"	
WD-08516-75	K	–418 to 1000°F (–250 to 537°C)	Response time: 225 s at 5 m/s airflow		
WD-08500-75	T	–418 to 1000°F (–250 to 537°C)	316 SS sheath and radiation shield		
Low-cost probes					
WD-08439-90	J	–310 to 572°F (–190 to 300°C)	Junction: exposed; isolated	5"	
WD-08439-92	K	–418 to 572°F (–250 to 300°C)	Response time: 225 s at 5 m/s airflow		
WD-08439-94	T	–418 to 572°F (–250 to 300°C)	304 SS sheath and SS wire coil		

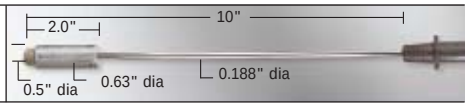
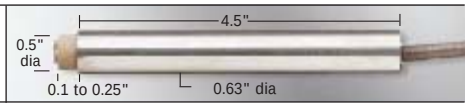
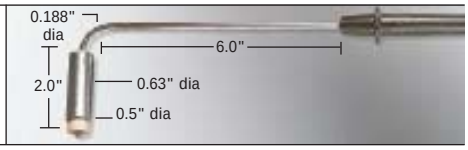
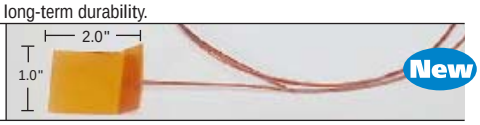
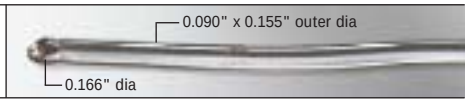
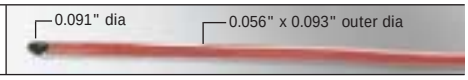
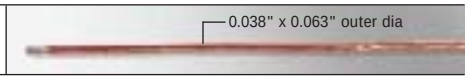
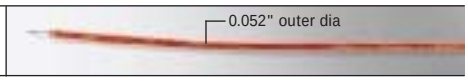
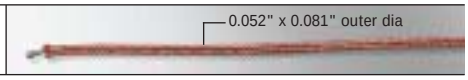
Digi-Sense® Surface and Flexible Insulated-Wire Probes

These probes feature a rugged thermoset plastic miniconnector and are compatible with all Digi-Sense and Acorn® thermocouple thermometers. Connectors and cord are color-coded based on thermocouple type: type J black, type K yellow, and type T blue.

A Surface Probes offer dual spring tips to provide positive contact with flat or slightly irregular surfaces. Include a 5-ft PVC coiled cord with strain relief that protects from repeated flexing and tugging. Ergonomic, easy-grip 5"L glass-filled nylon handle (unless noted below) provides maximum heat insulation and impact resistance. Fingerstops on handle prevent probe from rolling and fingers from sliding when inserting probe into hard materials. The 316 stainless steel sheath (shaft casing) provides durability, strength, and maximum abrasion resistance.

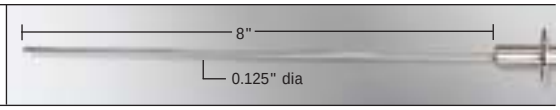
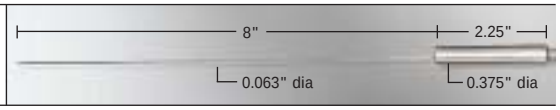
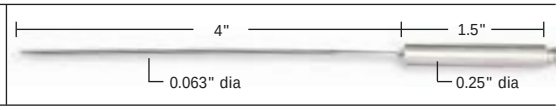
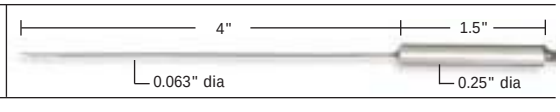
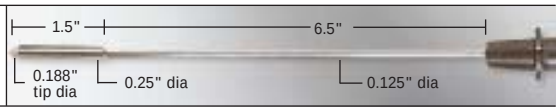
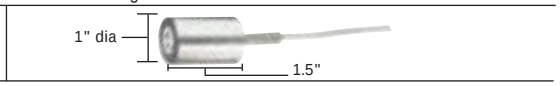
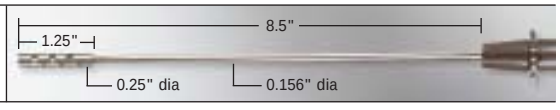
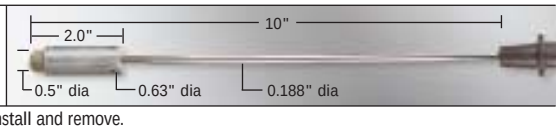
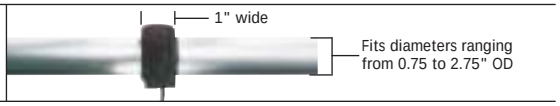
B Flexible Insulated-Wire Probes include a straight insulated cable without a handle. These probes can be easily bent and mounted on walls or around corners. Teflon®-coated probes for use with acids and chemicals. Kapton® probes exhibit an excellent balance of physical, chemical, and electrical properties over a wide temperature range, particularly at unusually high temperatures. Fiberglass-insulated probes offer excellent electrical insulation properties and can be exposed to extremely high temperatures.

Specifications & Ordering Information

Catalog number	Type	Temperature range	Features	Tip length	Dimensions
A Surface probes					
Standard straight probes					
WD-08517-60 WD-08516-60 WD-08500-60	J K T	–310 to 1200°F (–190 to 649°C) –418 to 1200°F (–250 to 649°C) –418 to 650°F (–250 to 343°C)	Junction: exposed; isolated Response time: 30 sec Aluminum housing; nylon handle	10"	
Low-cost probes					
WD-08439-70 WD-08439-72 WD-08439-74	J K T	–310 to 1200°F (–190 to 649°C) –418 to 1200°F (–250 to 649°C) –418 to 700°F (–250 to 371°C)	Junction: exposed; isolated Response time: 30 sec Aluminum housing; no handle	4.5"	
90°-angle probes, Ideal for hard-to-reach areas.					
WD-08517-64 WD-08516-64 WD-08500-64	J K T	–310 to 1200°F (–190 to 649°C) –418 to 1200°F (–250 to 649°C) –418 to 650°F (–250 to 343°C)	Junction: exposed; isolated Response time: 30 sec Aluminum housing; nylon handle	2"	
Flat-leaf probes, flexible for positive contact in hard-to-reach areas; use between metal plates or on other surfaces.					
WD-08518-50 WD-08518-60 WD-08518-70	J K T	–310 to 1400°F (–190 to 760°C) –418 to 1650°F (–250 to 900°C) –418 to 752°F (–250 to 400°C)	Junction: grounded Response time: 5 sec Nylon handle	4.5"	
Self-adhesive probes, adhere to most surfaces, Kapton-insulated wire and industrial adhesives for high temperature and long-term durability.					
WD-08519-50 WD-08519-52 WD-08519-54	J K T	–310 to 760°F (–190 to 404°C) –418 to 760°F (–250 to 404°C) –418 to 760°F (–250 to 404°C)	Junction: grounded Response time: 5 sec No handle; 5-ft L wire	—	
B Flexible insulated-wire probes					
PVC-insulated probes with epoxy-coated tip, 20-gauge (0.032" dia) wire; 10-ft L; short-term immersible.					
WD-08466-02 WD-08466-04 WD-08466-06	J K T	–310 to 221°F (–190 to 105°C) –418 to 221°F (–250 to 105°C) –418 to 221°F (–250 to 105°C)	Junction: ungrounded Response time: 25 sec	—	
Fine-gauge Teflon® PTFE-insulated probe, 0.025" outer dia; 3-ft L; implant in semisolids. Includes five 18-gauge needles.					
WD-08506-75	T	–418 to 302°F (–250 to 150°C)	Junction: ungrounded Response time: 0.5 sec	—	
Teflon® FEP-insulated probes with epoxy-coated junction, 24-gauge (0.020" dia) wire; 10-ft L; long-term immersible.					
WD-08466-81 WD-08466-82 WD-08466-83	J K T	–310 to 400°F (–190 to 204°C) –418 to 400°F (–250 to 204°C) –418 to 400°F (–250 to 204°C)	Junction: ungrounded Response time: 15 sec	—	
Kapton®-insulated probe, 24-gauge (0.020" dia) wire; 10-ft L; ideal for multipoint temperature measurements.					
WD-08517-90	J	–310 to 600°F (–190 to 315°C)	Junction: exposed Response time: 15 sec	—	
Kapton-insulated probes, 30-gauge (0.010"dia) wire; 5-ft L; ideal for checking food temperatures. Pack of six.					
WD-08505-87 WD-08505-86 WD-08505-85	J K T	–310 to 759°F (–190 to 404°C) –418 to 759°F (–250 to 404°C) –418 to 759°F (–250 to 404°C)	Junction: exposed Response time: 0.5 sec	—	
Fiberglass-insulated probes, 24-gauge (0.020" dia) wire; 10-ft L. Use for high-temperature measurements.					
WD-08512-81 WD-08512-82 WD-08512-83	J K T	–310 to 900 (–190 to 482) –418 to 900 (–250 to 482) –418 to 750 (–250 to 400)	Junction: exposed Response time: 15 sec	—	

Digi-Sense® Specialty Probes

Designed for food, science, electronics, and HVAC applications

Catalog no.	Type	Temperature range	Features	Dimensions*
A Food probes—easy clean-up designs. For more food probes, see the stainless steel probes on page 7				
All stainless steel probes, 8"L; for added durability—ideal for food processing applications. Include 4.5"L stainless steel handle and 4-ft SS-armored cable.				
WD-93600-02 WD-93600-22 WD-93600-42	J K T	–310 to 1400°F (–190 to 760°C) –418 to 1650°F (–250 to 899°C) –418 to 752°F (–250 to 400°C)	Junction: grounded Response time: 30 sec 316 SS sheath; miniconnector; SS handle	
Small-diameter probes with miniature stainless steel handles, 8"L. Ideal for checking food temperatures. Include 5-ft coiled cable.				
WD-08505-61 WD-08505-62 WD-08505-63	J K T	–310 to 1300°F (–190 to 704°C) –418 to 1500°F (–250 to 816°C) –418 to 650°F (–250 to 343°C)	Junction: grounded Response time: 10 sec 316 SS sheath; miniconnector; SS handle	
Food-service probes with hypodermic tip, 4"L. Include 4-ft straight armored cable.				
WD-93607-20 WD-93607-22 WD-93607-24	J K T	–310 to 700°F (–190 to 371°C) –418 to 700°F (–250 to 371°C) –418 to 700°F (–250 to 371°C)	Junction: grounded Response time: 10 sec 316 SS sheath and handle; miniconnector	
B Science needle tip probes				
Small-diameter probes with hypodermic tip, 4"L. Include 5-ft coiled cable.				
WD-93601-02 WD-93601-04 WD-93601-06	J K T	–310 to 1300°F (–190 to 704°C) –418 to 1500°F (–250 to 816°C) –418 to 650°F (–250 to 343°C)	Junction: grounded Response time: 15 sec 316 SS sheath; miniconnector; glass-filled polypropylene handle	
Hypodermic probes, 4"L. Include 4-ft straight PVC cable and bendable sheath.				
WD-08116-65 WD-08117-65 WD-08113-65	J K T	–310 to 700°F (–190 to 371°C) –418 to 700°F (–250 to 371°C) –418 to 700°F (–250 to 371°C)	Junction: grounded Response time: 10 sec 316 SS sheath and handle; miniconnector	
C Electronics small surface probes—fast response and minimal damages to components.				
Small-diameter probes, 8"L. Small diameter is ideal for confined areas. Exposed junction is isolated from 316 SS shaft and aluminum housing with ceramic support. Include 5-ft coiled cable.				
WD-08517-62 WD-08516-62 WD-08500-62	J K T	–310 to 1200°F (–190 to 649°C) –418 to 1200°F (–250 to 649°C) –418 to 650°F (–250 to 343°C)	Junction: exposed; isolated Response time: 15 sec 316 SS shaft and aluminum housing Miniconnector; nylon handle	
D HVAC probes				
Dropping/magnetic probes, 1.5"L. Attach magnetic probe to any flat ferrous surface. Include 10-ft straight SS braid over fiberglass-insulated wire.				
WD-08519-86 WD-08514-86 WD-08525-86	J K T	–310 to 1200°F (–190 to 649°C) –418 to 1200°F (–250 to 649°C) –418 to 750°F (–250 to 399°C)	Junction: exposed Response time: 30 sec Aluminum housing; miniconnector	
General-purpose air/gas probes; 8.5"L; for general-purpose air temperature measurement. Includes 5-ft coiled cable.				
WD-08517-75 WD-08516-75 WD-08500-75	J K T	–310 to 1000°F (–190 to 537°C) –418 to 1000°F (–250 to 537°C) –418 to 1000°F (–250 to 537°C)	Junction: exposed; isolated Response time: 225 s at 5 m/s airflow 316 SS sheath and radiation shield; miniconnector; nylon handle0	
Standard straight probes, 10"L. Use to monitor such surfaces as hot plates, furnaces, and molds. Exposed junction is isolated from 316 SS shaft and aluminum housing with ceramic support. Includes a 5-ft coiled cable.				
WD-08517-60 WD-08516-60 WD-08500-60	J K T	–310 to 1200°F (–190 to 649°C) –418 to 1200°F (–250 to 649°C) –418 to 650°F (–250 to 343°C)	Junction: exposed; isolated Response time: 30 sec 316 SS shaft; aluminum housing; miniconnector; nylon handle	
Velcro® strap-on probes, 8"L. Temporarily or permanently strap onto tubing or pipes—probes are easy to install and remove. Strap is 8" long and fits diameters from 0.75 to 2.75" OD. Include 10-ft straight PVC cable.				
WD-08469-80 WD-08469-82 WD-08469-84	J K T	–310 to 212°F (–190 to 100°C) –418 to 212°F (–250 to 100°C) –418 to 212°F (–250 to 100°C)	Junction: ungrounded Response time: 300 sec Miniconnector	

*Overall probe sheath lengths may vary up to ±0.25".

Digi-Sense® Thermocouple Wires

Wires come in 24 or 20 gauge for fabricating your own probes or extension cables (meets ANSI and ASTM standards). PVC/PVC wire is extension-grade wire.

Type	Insulation	24-gauge wire Catalog number	20-gauge wire Catalog number
J	PVC	WD-08541-06	WD-08541-16
K		WD-08541-09	WD-08541-20
T		WD-08541-12	WD-08541-25

RTD Temperature Measurement

What is an RTD?

RTD stands for Resistance Temperature Detector. This is the sensing technology that determines temperature by measuring the change in electrical resistance across two metal wires. The resistance value is then measured and interpreted by a RTD thermometer, and displayed for a user to view. While RTD wire can be made of any metal, platinum is the metal of choice due to its excellent repeatability, stability, and resistance to corrosion and chemicals.

Why choose an RTD?

RTDs are more accurate and stable than other sensors, such as thermocouples, but they cannot be used to measure extremely high temperatures. Choose an RTD sensor if you are willing to pay a little more for increased accuracy and repeatability.

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

WD-17002-04 NIST-traceable certificate for RTD system (meter + probe)

WD-17000-04 NIST-traceable certificate for RTD meter

WD-17001-04 NIST-traceable certificate for RTD probe

Service includes test data calibrated at four temperature test points.

Acorn® Temp 6 RTD Thermometer

Splash-resistant, sealed membrane keypad makes cleanup easy

Protective rubber boot shields meter from damage

Displays minimum and maximum readings

°F/°C selectable

Large, ⅞" tall display is easy to read

Probe not included

This thermometer offers the high accuracy of RTD technology at an economical price. Positive-action keys with audible clicks are easy to press. MIN/MAX button shows the lowest/highest temperature since the meter was turned on. Hold function freezes measurement reading for viewing. Calibration feature allows user to calibrate meter at almost any location—just place the probe in a bucket of ice water and press the CAL button.

Built-in stand and continuous mode operation allow meter to be used for benchtop use; or use power saver mode to turn meter off automatically after 17 minutes and save on battery life. Other features include low-battery indication, °F/°C selection, and protective rubber boot with stand. Thermometer accepts one 100 Ω RTD probe with three-pin connector. Probe is not included; see page 13 for a full selection.

What's included: protective rubber boot and four AAA batteries.

Protective rubber boot features a tilt stand.

ISO 9001:2000 CERTIFIED SUPPLIER

3 year warranty

Specifications

Range	–328 to 1562°F (–200 to 850°C)
Resolution	0.1°F/C
Accuracy	±0.4°F from –148 to 392°F (±0.2°C from –100 to 200°C); ±4.0°F (±2.0°C) outside this range
Display	4-digit LCD with ⅝" (14 mm) high numerals
Display update rate	Every 0.5 second
Power	Four AAA batteries (included)
Dimensions	2¾"W x 5¾"H x 1¼"D (7 x 14.5 x 3.5 cm)

Ordering Information

Catalog number	Description
WD-35626-20	Temp 6 RTD thermometer

A wide range of RTD thermometer probes are available
see page 13

Digi-Sense® RTD Thermometers

High-accuracy temperature measurement up to ±0.06°F (±0.03°C)

IP54-rated case provides splash and dust resistance

Heavy-duty housing with bright, easy-to-read display

Available in easy-to-use Standard model or Advanced datalogging model

Standard model

Avanced model

These thermometers feature a rugged ABS/polycarbonate plastic case with a sealed silicone rubber keypad for an IP54 rating. Casing design is tapered towards the bottom of the meter for comfortable one-handed gripping, while maintaining a large display at the top. Seven-segment character LCD allows easy readability and viewing. Large, positive-action buttons are easy to press. Calibration function ensures accuracy and correct temperature measurement at every use. To calibrate the meter, simply place the probe in a container packed with ice, fill with water, and press the CAL button; meter automatically recognizes the freezing point.

Use the hold function to freeze readings for later viewing. The built-in tilt stand enables hands-free operation. Select between °F/°C scales. Auto-shutoff helps to save on battery life. Low-battery indication provides power-failure warning. Foam padding on back helps to hold the meter in place on flat surfaces and prevents slipping.

Meters operate on two AA batteries (included) and accept one 100 Ω RTD probe with three-pin connector. Probe is not included; order separately on facing page.

Standard model is perfect for any basic temperature measurement application. It features an easy-to-use 4-button design. The large ½" high screen is easy to read, even from a distance. Reliability, quality, and pricing make this the best value.

Advanced model has all the same features listed above, plus datalogging capability to log and document up to 1000 measurements on-site at any location. Download the data to your computer using the optional RS-232 interface (sold separately at right) and save in a spreadsheet program. The data is time and date stamped to help with data-trending and analysis. Logging interval can be stored by manually pressing the LOG button, or can be set to log automatically every one second to 60 minutes. The 1" high LCD with triple, four-digit display shows the current, minimum, and maximum measurements. Continuous operation is possible with an optional AC adapter (order separately at right).

What's included: two AA batteries.

Specifications

ITS-90 ISO 9001:2000 CERTIFIED SUPPLIER CE 3 year warranty

Standard model	
Range	–328 to 1562°F (–200 to 850°C)
Resolution	0.1°F/C from –148 to 392°F (–100 to 200°C), 1°F/C outside this range
Accuracy	±0.4°F (±0.2°C) from –148 to 392°F (–100 to 200°C), ±4°F (±2°C) outside this range
Display	4-digit LCD with ⅜" (10 mm) high numerals
Display update rate	Every 0.5 second
Power	Two AA batteries (included)
Dimensions	3¼"W x 6¼"H x 1¼"D (8.4 x 15.8 x 3 cm)

Advanced model	
Range	–328 to 2210°F (–200 to 1210°C)
Resolution	0.01°F/C from –99.99 to 99.99°F/C, 1°F/C above 1000°F/C, 0.1°F/C outside this range
Accuracy	±0.06°F (±0.03°C) for 0.01° resolution, ±0.1°F/C for 0.1° resolution, ±1°F/C for 1° resolution
Display	Triple 4-digit LCD, ⅜" (10 mm) high for top, ¼" (5 mm) high for bottom
Display update rate	Every 0.6 second
Power	Two AA batteries (included) or optional AC adapter
Dimensions	3¼"W x 6¼"H x 1¼"D (8.4 x 15.8 x 3 cm)

Ordering Information

Catalog number	Description
WD-60010-80	Standard Digi-Sense RTD thermometer
WD-60010-85	Advanced Digi-Sense RTD thermometer

Accessories

WD-08520-05 Carrying case for storage, canvas cloth, holds one meter and probe, with belt-loop clip

WD-91100-90 Carrying case for in-field use, splash-proof vinyl, holds one meter and probe, with belt-loop clip

WD-91100-52 Adapter, 115 VAC, compatible with Advanced model only

WD-91100-55 Adapter, 230 VAC, compatible with Advanced model only

WD-91100-85 RS-232 interface connects to your computer's 9-pin serial port for easy uploading of data. Use with most popular RS-232 programs including Windows®. Compatible with Advanced model only

WD-10374-50 Infrared printer is ideal for on-site documentation. Transfer data using infrared light without the use of cables—just position printer within 12" (30.5 cm) of the top of the thermometer. Set print interval rate from once every three seconds to once every 60 minutes. Includes one roll of paper and four AA batteries. Compatible with Advanced model only

WD-10374-52 Replacement printer paper, pack of 6 rolls

Digi-Sense® RTD Probes

Industrial handle, positive-locking connector, and 5-ft coiled cord included!

Use our RTD probes to measure temperature when accuracy is important. All probes include a 5-ft PVC coiled cord with strain relief that protects from repeated flexing and tugging. Ergonomic, easy-grip 5" long glass-filled nylon handle provides maximum heat insulation and impact resistance. Fingerstops on handle prevent probe from rolling and fingers from sliding when inserting probe into hard materials. The 316 stainless steel sheath (tip casing) provides durability, strength, and maximum abrasion resistance. Rugged three-pin circular connector with positive-locking tab prevents loose connections. Compatible with all Digi-Sense® and Acorn® RTD thermometers.

A General-Purpose: Designed for most common and liquid immersion applications.

B Penetration: Pointed tip style for penetration into hard and semi-solid materials. Sturdy stainless steel tip casing prevents tip from bending when inserting.

C Surface: Flat sensor wires are encased in hardened MgO ceramic insulation to ensure positive contact even under vibrating circumstances and extreme conditions.

D Air/Gas: Perforated shield allows air and other gases to flow into sensor for quick readings. Metal shield also absorbs radiated heat and minimizes sensor error.

E Teflon®-Coated: Same as our general-purpose tip above, but this tip has a Teflon® coating over the tip casing for use with acids and strong chemicals.

F Small Diameter: Same as our general-purpose tip above, but these have a ⅛" diameter tip for insertion into soft and semi-soft materials.

G Smallest Diameter Wedge: Small diameter angled tip with point can be wedged into tight areas and minimizes damage to samples.

H Alligator Clip: Clips onto objects up to ⅜" thick. The 10-ft, 304 stainless steel flexible braid over fiberglass cable has no handle.

INNOCAL® INNOVATIVE CALIBRATION SOLUTIONS

NIST TRACEABLE

WD-17002-04 NIST-traceable certificate for RTD system (meter + probe) with test data calibrated at four temperature test points

WD-17001-04 NIST-traceable certificate for RTD probe

Nylon handle

Three-pin connector

A General-purpose tip

B Penetration tip

C Surface tip

D Air/gas tip

E Teflon®-coated tip

F Small-diameter tip

G Smallest diameter wedge

H Alligator clip

Specifications & Ordering Information

Key	Catalog number	Temperature range	Tip length	Dimensions
A	WD-08117-70 WD-08117-72	–58 to 932°F (–50 to 500°C)	10" 18"	0.188" dia 10" or 18"
B	WD-08117-85	–58 to 932°F (–50 to 500°C)	4"	0.188" dia 4"
C	WD-08117-75	–58 to 932°F (–50 to 500°C)	8"	1.6" 6.5" 0.250" dia
D	WD-08117-90	–58 to 932°F (–50 to 500°C)	10"	10" 0.250" dia 0.188" dia
E	WD-08117-87	–50 to 500°F (–50 to 260°C)	10"	0.145" dia 10"
F	WD-08117-73 WD-08117-74	–58 to 932°F (–50 to 500°C)	10" 18"	0.125" dia 10" or 18"
G	WD-08117-80	–58 to 932°F (–50 to 500°C)	2"	0.093" dia 2"
H	WD-08117-89	–58 to 932°F (–50 to 500°C)	1.5"	1.39" 0.38"

Digi-Sense® Thermistor Thermometers

Standard model

Advanced model

Excellent accuracy over the biological temperature range

IP54-rated case provides splash and dust resistance

Heavy-duty housing with bright, easy-to-read display

Available in easy-to-use Standard model or Advanced datalogging model

These thermometers feature a rugged ABS/polycarbonate plastic case with a sealed silicone rubber keypad for an IP54 rating. Casing design is tapered towards the bottom of the meter for comfortable one-handed gripping, while maintaining a large display at the top. Seven-segment character LCD allows easy readability and viewing. Large, positive-action buttons are easy to press. Calibration function ensures accuracy and correct temperature measurement at every use. To calibrate the meter, simply place the probe in a container packed with ice, fill with water, and press the CAL button; meter automatically recognizes the freezing point.

Use the hold function to freeze readings for later viewing. The built-in tilt stand enables hands-free operation. Select between °F/°C scales. Auto-shutoff helps to save on battery life. Low-battery indication provides power-failure warning. Foam padding on back helps to hold the meter in place on flat and inclined surfaces and prevents slipping.

Meters operate on two AA batteries (included) and accept one thermistor probe with ¼" phono plug. Probe is not included; order separately on pages 15-16.

Standard model is perfect for any basic temperature measurement application. It features an easy-to-use four-button design. The large ½" high screen is easy to read, even from a distance. Reliability, quality, and pricing make this the best value.

Advanced model has all the same features listed above, plus datalogging capability to log and document up to 1000 measurements on-site at any location. Download the data to your computer using the optional RS-232 interface (sold separately at right) and save in a spreadsheet program. The data is time and date stamped to help with data-trending and analysis. Logging interval can be stored by manually pressing the LOG button, or can be set to log automatically every one second to 60 minutes. The 1" high LCD with triple, four-digit display shows the current, minimum, and maximum measurements. Continuous operation is possible with an optional AC adapter (order separately at right).

What's included: two AA batteries.

ITS-90 ISO 9001:2000 CERTIFIED SUPPLIER CE

Specifications

3 year warranty

Standard Model	
Range	–40 to 257°F (–40 to 125°C)
Resolution	0.1°F/C
Accuracy	±0.4°F (±0.2°C)
Display	4-digit LCD with ⅜" (10 mm) high numerals
Display update rate	Every 0.5 second
Power	Two AA batteries (included)
Dimensions	3¼"W x 6¼"H x 1¼"D (8.4 x 15.8 x 3 cm)

Advanced Model	
Range	–40 to 302°F (–40 to 150°C)
Resolution	0.01°F/C from –99.99 to 99.99°F/C, 1°F/C above 1000°F/C, 0.1°F/C outside this range
Accuracy	±0.06°F (±0.03°C) up to 99.99°F/C, ±0.1°F/C from 100 to 257°F (100 to 125°C), ±0.2°F/C above 257°F (125°C)
Display	Triple 4-digit LCD, ⅜"(10 mm) high for top, ¼" (5 mm) high for bottom
Display update rate	Every 0.6 second
Power	Two AA batteries (included) or optional AC adapter
Dimensions	3¼"W x 6¼"H x 1¼"D (8.4 x 15.8 x 3 cm)

Ordering Information

Catalog number	Description
WD-60010-70	Standard thermistor thermometer
WD-60010-75	Advanced thermistor thermometer

Accessories

WD-08520-05 Carrying case for storage, canvas cloth, holds one meter and probe, with belt-loop clip

WD-91100-90 Carrying case for in-field use, splash-proof vinyl, holds one meter and probe, with belt-loop clip

WD-91100-52 Adapter, 115 VAC, compatible with Advanced model only

WD-91100-55 Adapter, 230 VAC, compatible with Advanced model only

WD-91100-85 RS-232 interface connects to your computer's 9-pin serial port for easy uploading of data. Use with most popular RS-232 programs including Windows®. Compatible with Advanced model only

WD-10374-50 Infrared printer is ideal for on-site documentation. Transfer data using infrared light without the use of cables—just position printer within 12" (30.5 cm) of the top of the thermometer. Set print interval rate from once every three seconds to once every 60 minutes. Includes one roll of paper and four AA batteries. Compatible with Advanced model only

WD-10374-52 Replacement printer paper, pack of 6 rolls

Technical Information

What is a thermistor?

Thermistor is a thermally sensitive resistor which changes electrical resistance due to temperature changes. It has very predictable characteristics and offers long-term stability.

Why choose a thermistor?

Thermistors have excellent accuracy over the biological or ambient temperature ranges when compared to RTDs or thermocouples, but have a limited temperature range that usually cannot exceed 300°F (150°C). Response times are generally faster than other types of probes.

Thermistor Thermometers & Probes

Acorn® Temp 4 & 5 Thermistor Thermometers

Splash-resistant, sealed membrane keypad makes cleanup easy

Protective rubber boot shields meter from damage
Display minimum and maximum readings
°F/°C selectable
Large, ⅞" tall display is easy to read

These thermometers offer the high accuracy of thermistor technology at an economical price. Positive-action keys with audible clicks are easy to press. MIN/MAX button shows the lowest/highest temperature since the meter was turned on. Hold function freezes measurement reading for viewing. Calibration feature allows user to calibrate meter at almost any location—just place the probe in a bucket of ice water and press the CAL button.

Built-in stand and continuous mode operation allow meter to be used for benchtop use; or use power saver mode to turn meter off automatically after 17 minutes and save on battery life. Other features include low-battery indication, °F/°C selection, and protective rubber boot with stand. Temp 4 meter accepts one thermistor probe with ¼" phono plug. Probe is not included; order separately on pages 15-16. Temp 5 meter includes one general-purpose thermistor probe; will not accept other probes.

What's included: protective rubber boot and four AAA batteries.

Temp 5 thermometer

35626-10

Specifications

Range	–40 to 257°F (–40 to 125°C)
Resolution	0.1°F/C
Accuracy	±0.4°F (±0.2°C)
Display	4-digit LCD with ⅝" (14 mm) high numerals
Display update rate	Every 0.5 second
Power	Four AAA batteries (included)
Dimensions	2¾"W x 5¾"H x 1¼"D (7 x 14.5 x 3.5 cm)

Ordering Information

ISO9001:2000 CERTIFIED SUPPLIER · CE · IP 54 · 3 year warranty

Catalog number	Description
WD-35626-00	Temp 4 thermistor thermometer
WD-35626-10	Temp 5 thermistor thermometer with probe

WD-35626-50 Replacement thermistor probe for Temp 5 thermometer only

Digi-Sense® 400-Series Thermistor Probes

Industrial handle and 5-ft coiled cord included

Use our thermistor probes to measure temperature when accuracy within the biological range is important. All probes include a 5-ft PVC coiled cord with strain relief that protects from repeated flexing and tugging. Ergonomic, easy-grip 5"L glass-filled nylon handle provides maximum heat insulation and impact resistance. Fingerstops on handle prevent probe from rolling and fingers from sliding when inserting probe into hard materials. The 316 stainless steel sheath (tip casing) provides durability, strength, and maximum abrasion resistance. All probes come with a ¼" phono plug connector. Compatible with all Digi-Sense® and Acorn® thermistor thermometers.

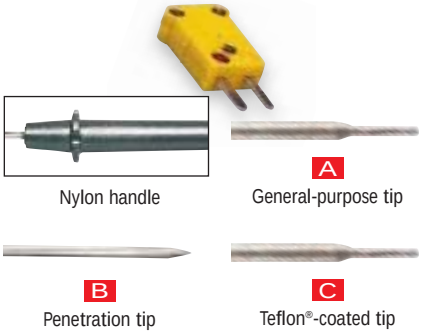
A General-Purpose: Designed for most common and liquid immersion applications.

B Penetration: Pointed tip style for penetration into hard and semi-solid materials. Sturdy stainless steel tip casing prevents tip from bending when inserting.

C Teflon®-Coated: Same as our general-purpose tip above, but this tip has a Teflon coating over the casing for use with acids and strong chemicals.

Specifications & Ordering Information

Key	Catalog number	Temperature range	Tip length	Dimensions
A	WD-93824-00	–22 to 212°F (–30 to 100°C)	10"	10" / 0.188" dia
B	WD-93824-30	–22 to 212°F (–30 to 100°C)	4"	4" / 0.188" dia
C	WD-93824-12	–22 to 212°F (–30 to 100°C)	10"	10" / 0.200" dia



Digi-Sense Flexible Thermistor Probes

New

Excellent accuracy over the biological temperature range

Probes are accurate to ±0.2°F from 32 to 150°F (±0.1°C from 0 to 70°C). Electrically isolated probes include a nondetachable 10-ft lead with ¼" phono plug (except as noted).

¼" phono plug

Specifications & Ordering Information

Catalog number	Description	Temperature range	Dimensions	Photo
WD-08491-02	General-purpose probe, immersible for short-term deep-water and sub soil readings. Vinyl sheath and tip. 10-ft lead.	–40 to 212°F (–40 to 100°C)	3/16" max, 9/64" dia, 5/16" max	
WD-08491-04	Like 08491-02 above, but with 50-ft lead.			
WD-08491-03	Like 08491-02 above, but with 100-ft lead.			
WD-08491-05	Small flexible probe, vinyl sheath and tip.	–40 to 212°F (–40 to 100°C)	1/8" dia, 3/16", 13"	
WD-08491-06	Liquid-immersion probe, 5/32" dia, 316 stainless steel (SS). Immersible only to cap unless waterproofed.	–40 to 302°F (–40 to 150°C)	4½", 7/8"	
WD-08491-07	Like 08491-06 above, but with 1/8" dia probe.			
WD-08491-13	Liquid-immersion probe, chemically inert for thermometric titrations. Pyrex® glass sheath.	–40 to 302°F (–40 to 150°C)	3/16" dia, 5"	
WD-08491-17	Small flexible probe for frozen food packages and cuvettes. Nylon and epoxy tip.	–110 to 212°F (–80 to 100°C)	1/8" dia, 3/32" dia, 2½"	
WD-08491-15	Epoxy-encapsulated thermistor element. Copper wire is 32 gauge; 3" long (no plug)	–110 to 167°F (–80 to 75°C) continuous use; 212°F (100°C) max intermittent use.	3/16", 5/32" dia, 3" copper wire	
WD-07549-99	¼" phone plug for 08491-15 (above)	—		
WD-08491-12	Pipe-fitting probe for closed pipes or vessels. Probe and fitting are 316 SS; not autoclavable; nondetachable lead. Not electrically isolated; 4½" long.	–40 to 300°F (–40 to 150°C)	5/32" dia, 1/8" NPT, 4½", 1 3/16"	
WD-08491-14	Pipe-fitting probe for closed pipes or vessels. Probe and fitting are 316 SS; autoclavable except lead; lead is detachable via BNC connector. Not electrically isolated; 1" long.	–40 to 300°F (–40 to 150°C)	5/32" dia, 1/8" NPT, 1", 1 5/16"	
WD-08491-08	Air temperature probe for test rooms, gas stream temperatures, and incubators. 316 SS cage around epoxy-encapsulated thermistor.	–40 to 300°F (–40 to 150°C)	1/4" dia, 1/2" dia, 1 7/8"	
WD-08491-10	Attachable surface probe, recommended for skin or flat-surface temperature measurements. Epoxy-backed 316 SS disk. Vinyl-covered parallel leads.	–40 to 212°F (–40 to 100°C)	3/8" dia, 1/8" max, 10-ft L flat lead, 0.05" x 0.132"	
WD-08491-09	Surface probe for skin, flat surfaces, and soil temperatures. Disk is 316 SS; probe includes handle.	–40 to 300°F (–40 to 150°C)	13/32" dia, 5/64", 17 gauge, 3 5/8", 1 1/4"	
WD-08491-11	Small surface probe. Epoxy-backed 316 SS disk on 24" nondetachable Teflon® lead. Not autoclavable; not electrically isolated.	–40 to 300°F (–40 to 150°C)	3/16" dia, 24", 1/16", 3/32" max	
WD-08491-16	Penetration probe for insertion into semi-solids like fruits, soil, tobacco. No handle. All 316 SS, with vinyl-covered lead.	–40 to 300°F (–40 to 150°C)	1/4", 5/32" dia, 4 11/16", 7/8"	

Barometers/ Thermohygrometers

Aneroid Barometers

Provide temperature-compensated barometric pressure measurements

Ideal for monitoring impending weather changes

Accurately measure atmospheric pressure from sea level up to 2000 feet

These barometers simultaneously measure atmospheric pressure and temperature using a built-in glass thermometer. The bimetallic temperature compensation preserves pressure reading accuracy at any temperature. Barometers require no batteries or external power, and are encased in an attractive brass case with a bezel for bulkhead mounting.

Specifications & Ordering Information

Display: analog
Sensor: alcohol-filled glass thermometer and bimetallic strip for temperature compensation
Dimensions: 6⅛" dia x 2"D

ISO9001:2000 CERTIFIED SUPPLIER · 1 year warranty · CE

Catalog number		WD-03316-70	WD-03316-72
Barometric pressure	Range	930 to 1070 mbar (27.5 to 31.6" Hg)	930 to 1070 mbar (698 to 802 mm Hg)
	Resolution	1 mbar (0.1" Hg)	1 mbar (1 mm Hg)
	Accuracy	±1 mbar (±0.03" Hg)	±1 mbar (±1 mm Hg)
Temperature	Range	–14 to 122°F (–10 to 50°C)	–10 to 50°C
	Resolution	1.0°F (1.0°C)	1.0°C
	Accuracy	±1.8°F (±1°C)	±1°C

Barometer with Digital Thermometer

Digital temperature readout provides accurate measurements

Measure barometric pressure in mbar and inches Hg

Corrosion-resistant ABS plastic housing

This instrument indicates barometric pressure on an analog display and selectable °F/°C temperature readings on a digital LCD for convenient monitoring. Use ring to wall mount for greater visibility.

What's included: mounting ring and one AA battery.

Specifications & Ordering Information

Display
Barometric pressure: analog
Temperature: 3½-digit LCD, 0.50"H
Sensor: digital solid state
Power: one AA battery (included)
Dimensions: 5⅝" dia x 1⅝"D

ISO9001:2000 CERTIFIED SUPPLIER · 1 year warranty · CE

Mode	Barometric pressure	Temperature
Range	945 to 1045 mbar (27.9 to 30.9" Hg)	–4 to 140°F (–23 to 60°C)
Resolution	0.5 mbar (0.1" Hg)	0.1°F (0.1°C)
Accuracy	±1 mbar (±0.03" Hg)	±1.8°F (±1.0°C)

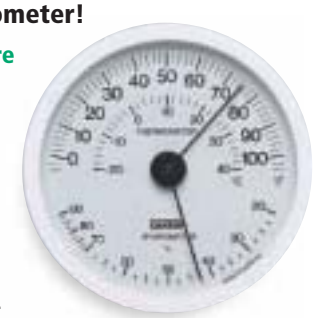
Catalog number	Description
WD-03316-80	Barometer with digital thermometer

Low-Cost Thermohygrometer

Most economical thermohygrometer!

Monitor humidity and temperature with a dual °F/°C display

Requires no batteries



Monitor conditions of your lab, office, or food storage area with this economical thermohygrometer. Instrument features easy-to-read dial indicators for both humidity and temperature. No batteries or external power are required for operation.

Specifications & Ordering Information

Response time: 1 minute
Display: analog
Sensor
RH: paper-coated metal coil
Temperature: metal coil
Dimensions: 5" dia x 1⅛"D

ISO9001:2000 CERTIFIED SUPPLIER · 1 year warranty

Mode	RH	Temperature
Range	25 to 80%	–4 to 104°F (–20 to 40°C)
Resolution	2.5%	2°F (1°C)
Accuracy	±5% from 25 to 70%, ±8% from 71 to 80%	±3.6°F (±2°C)

Catalog number	Description
WD-35700-10	Low-cost thermohygrometer

Large Dial Thermohygrometer

Large 10" dial display allows you to view temperature from a distance

Convenient wall-mount visibility

No batteries or power required

Ideal for the laboratory or greenroom, this indicator features humidity and a dual temperature display in °F and °C. White numerals against a dark blue background increase visibility.

Specifications & Ordering Information

Response time: 1 minute
Display: analog
Sensor
RH: paper-coated metal coil
Temperature: metal coil
Dimensions: 10¾" dia x 1⅜"D

ISO9001:2000 CERTIFIED SUPPLIER · 1 year warranty

Mode	RH	Temperature
Range	25 to 80%	–22 to 122°F (–30 to 50°C)
Resolution	5%	2°F (1°C)
Accuracy	±5% from 25 to 70%, ±8% from 71 to 80%	±3.6°F (±2°C)

Catalog number	Description
WD-35700-20	Large dial thermohygrometer

Thermohygrometers

Thermohygrometer with Digital Thermometer

Switch-selectable °F or °C scale

Digital display provides accurate and stable temperature measurements

Easily mount this thermohygrometer in your office, laboratory, greenhouse, or food storage environment. This thermohygrometer remains accurate and stable without maintenance or adjustments. Case is constructed of corrosion-resistant ABS plastic.

What's included: mounting bracket, screws, and one AA battery.

Specifications & Ordering Information

Response time: 1 minute
Display
RH: analog
Temperature: 3½-digit LCD, 0.50"H

Sensor
RH: human hair bundle
Temperature: digital solid state
Power: one 1.5 V AA battery (included)
Dimensions: 5" dia x 1⅛"D

ISO 9001:2000 CERTIFIED SUPPLIER · 1 year warranty · CE

Mode	RH	Temperature
Range	20 to 100%	0 to 160°F (–18 to 72°C)
Resolution	2%	0.1°F (0.1°C)
Accuracy	±4% from 20 to 90%, ±8% from 90 to 100%	±1.8°F (±1.0°C)

Catalog number	Description
WD-35700-00	Thermohygrometer with digital thermometer

Thermohygrometer with Glass Thermometer

Features alcohol-filled thermometer

Safe and accurate alternative to mercury thermometers

Humidity adjustment screw provides accurate RH measurements

Use this indicator for RH and temperature readings in your lab, office, or computer room. Instrument requires no batteries or power. This indicator features a °F/°C glass thermometer.

Specifications & Ordering Information

Response time: 1 minute
Display: analog

Sensor
RH: synthetic hair
Temperature: alcohol-filled glass thermometer
Dimensions: 4⅛" dia x 11/16"D

ISO 9001:2000 CERTIFIED SUPPLIER · 1 year warranty · CE

Mode	RH	Temperature
Range	20 to 99%	–4 to 120°F (–20 to 48°C)
Resolution	1%	2°F (1°C)
Accuracy	±3% from 68 to 122°F (20 to 50°C), ±5% outside this range	±3°F (±2°C)

Catalog number	Description
WD-03313-70	Thermohygrometer with glass thermometer

Thermohygrometer Kits

Kits provide everything you need to measure quickly and accurately

Calibrate your meter "on-the-job" with two point auto-cal function

Analog voltage output provides datalogging capabilities

Model 35612-10 features dew point measurements

Thermohygrometers display humidity and temperature or dew point and temperature (model 35612-10 only) on a large dual LCD. Easily activate low and high RH calibration on the push-button keypad—program runs automatically after setup. Min/max function displays low and high humidity, temperature, or dew point values. Model 35612-10 offers the added measurement of dew point for diverse applications.

Other features include memory reset, hold, selectable °F/°C, high and low audible set point alarms, and auto-off. Meters operate on four AAA batteries or optional AC adapter.

What's included: meter, probe, 33% and 75% calibration salts, four AAA batteries, and hard carrying case.

Specifications & Ordering Information

Response time: 10 seconds
Display
RH: 3-digit, 0.63"H
Temperature: 4½-digit, 0.25"H
Sensor
RH: capacitance film
Temperature: thermistor

CE · DEW POINT · 1 year warranty

Power: four 1.5 V AAA batteries (included)
Dimensions
Meter: 3½"W x 7½"H x 1¾"D
Probe: 7¾"L x 0.69" dia
Carrying case: 14"W x 9"H x 2¾"D

Catalog number		WD-35612-00	WD-35612-10
RH	Range	0.0 to 99.9%	
	Resolution	0.1%	
	Accuracy	±2% (0 to 95%); ±3% (95 to 100%)	
	Output	0 to 1 V (10 mV/1% RH)	
Temperature	Range	32 to 122°F (0 to 50°C)	
	Resolution	0.1°F/°C	
	Accuracy	±1.0°F (±0.6°C)	
	Output	0 to 2 V (10 mV/°F, 40 mV/°C)	
Dew point	Range	—	–60 to 120°F (–51 to 49°C)
	Resolution	—	0.1°F/°C
	Accuracy	—	±4.0°F (±2.0°C)
	Output	—	0 to 2 V (10 mV/°F, 40 mV/°C)

Accessories

WD-37950-52 Replacement RH/temperature probe, 4-ft cable
WD-35612-90 Calibration salt, 33% RH
WD-35612-91 Calibration salt, 75% RH
WD-35615-75 Carrying pouch. Protects meter during measurements; top and side openings provide accessibility to probe and connections
WD-35615-07 AC adapter, 110 VAC
WD-35615-08 AC adapter, 220 VAC

Digi-Sense®

Thermohygrometers

Simultaneously display temperature, humidity, and dew point

IP54 rating protects against dust and splashes

Single- or dual-point calibration provides ultimate accuracy

Log up to 1000 data points with time and date stamp (model 60020-52 only)

These industrial-grade thermohygrometers offer the unique feature of displaying temperature, humidity, and dew point simultaneously—eliminating the need to switch screen displays. The impact-resistant, IP54-rated design protects the meter from dust, particles, and water. The ergonomic design provides comfort during measurement, and features a sealed silicone rubber keypad.

Model 60020-40 features selectable °F/°C readings, hold function, single- or dual-point temperature and humidity calibration, low-battery indication, and a built-in tilt stand.

Model 60020-52 provides the same features as 60020-40, plus logging capabilities, adjustable filter rate (stabilize fluctuating readings), and Min/Max and Recall functions.

Log up to 1000 data points with time and date stamp for later analysis. Program logging interval between one second to 60 minutes. Download stored data to a PC via RS-232 interface (sold separately below right) or transmit data to infrared printer 10374-50 (sold separately below right) via infrared signal output. The infrared printer is ideal for on-site documentation. Transfer data without the use of cables—just position the printer within 12" from the top of meter 60020-50.

What's included: probe and two AA batteries. Optional AC adapters are available separately at right.

60020-40

60020-52

10374-50

Specifications & Ordering Information

Response time: 4 seconds
Output: RS-232 and infrared (model 60020-52 only)
Memory capacity: 1000 data points (model 60020-52 only)
Display: dual-line, 4-digit LCD

Sensor
RH: capacitance film
Temperature: thermistor
Power: two AA batteries (included)
Dimensions
Meter: 3"W x 6"H x 1"D
Probe: 10"L x 0.5" dia

ISO9001:2000 CERTIFIED SUPPLIER · 1 year warranty · CE · DEW POINT · IP 54

Mode	RH	Temperature	Dew point
Range	0 to 100%	–40 to 140°F (–40 to 60°C)	–130 to 140°F (–90 to 60°C)
Resolution	0.1%	0.1°F/C	0.1°F/C
Accuracy	±2%	±1°F (±0.5°C)	—

Catalog number	Description
WD-60020-40	Thermohygrometer with dew point
WD-60020-52	Logging thermohygrometer with dew point

Accessories

WD-60020-62 Replacement RH/temperature probe, 3-ft cable

WD-91100-52 AC adapter, 115 VAC

WD-91100-55 AC adapter, 230 VAC

WD-91100-85 RS-232 interface for model 60020-52

WD-10374-50 Infrared printer, transfer data from model 60020-52 for on-site documentation. Includes one roll of paper and four AA batteries

WD-10374-52 Replacement printer paper, pack of 6 rolls

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS
NIST TRACEABLE

Ensure the accuracy of your humidity equipment

Calibration to a NIST-traceable standard helps meet ISO, FDA, USDA, and EPA quality guidelines. Our ISO/IEC 17025-accredited metrology laboratory will pretest and calibrate humidity instruments. Service includes NIST-traceable calibration certificate with before and after test data at three humidity points (30, 60, and 80% RH) and one temperature point at ambient.

WD-17030-20 NIST-traceable humidity calibration certificate

Digi-Sense® 12-Channel Scanning Thermometers

Store and recall up to 4680 sets of readings with time and date stamp

Automatically or manually display, record, and output temperature readings

Field calibrate each probe separately—achieve accuracies of ±0.1% of reading!

Bidirectional RS-232 for setup or PC datalogging

Benchtop 12-channel scanning thermometer

These 12-channel scanning thermometers are your best choice when simultaneous monitoring of temperatures during different processes or phases is critical. Benchtop unit accepts most any power source giving you great flexibility as to where and when it may be used. Wall-mount unit is ideal for permanent installation and continuous monitoring of your processes. Both models function as a datalogger—store data in nonvolatile memory and later download to your printer or PC. Link up to eight of either model in series to expand the number of channels you can scan for a maximum of 96 channels. Each of the 12 thermocouple inputs are programmable to scan from every four seconds to every hour. Graph in real time—use CD-ROM software (included). Includes a real-time clock and nonvolatile memory. RF immunity—maintains accuracy in RF fields.

Benchtop Thermometer—Parallel printer connection allows you to connect the thermometer to a printer—make a hard copy of your data as a permanent record. Power unit with included 115 VAC or 230 VAC adapter or use with any 10 to 28 VDC or 7 to 20 VAC 500 mA power supply. Accepts thermocouple probes with miniconnectors for quick and easy probe changes. Probes sold separately on pages 7-10 or 21.

Wall-Mount Thermometer—Use high and low relays for on/off control; relays are rated at 115 VAC, 2 A resistive; 250 VAC, 2 A resistive; or 30 VDC 2 A resistive. Features an easy-to-view dripproof housing with all wire connections on bottom. Wall-mount models accept thermocouple probes with stripped ends (wire sold separately on page 10). Power unit with 90 to 240 VAC, 50/60 Hz.

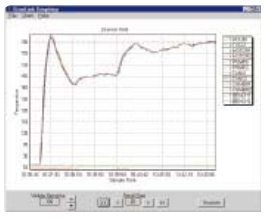
Instrument Features for Both Models—Scan and log up to 12 thermocouple inputs from any combination of type J, K, T, E, N, B, R, and S thermocouple probes. All thermocouple types are individually selectable per channel. Records temperature data sequentially so that process variations and thermal profiling can be monitored. Datalogging feature automatically stores up to 4680 sets of readings and then allows the data to be downloaded to a computer. Up to eight units can be linked together for a maximum channel capacity of 96.

The easy-to-use front panel menu keys allow the user to program datalogging and print intervals, scan rates, date and time, temperature scales (°F, C, K, or R), resolution (0.1° or 1°), channels displayed, thermocouple type, and data output parameters. Each channel features HOLD, STORE, MIN and MAX, RECALL, and AVERAGE buttons. All channels can be calibrated in the field at one or two points to ensure accuracy.

Multiple Safety Features—Thermocouple probes are electrically isolated from each other and data outputs to provide safe and accurate measurements even when probes are exposed to harsh electrical conditions. Each channel offers high and low audible alarm selectable set points.

Physical Features—Easy-to-read, ¾" high, 14-segment, 12-character alphanumeric LCD indicates channel number or name, temperature reading, temperature scale, open probe conditions, and out-of-range readings.

Computer/Printer Capabilities—RS-232 serial communication compatible. Software allows data to be downloaded to a computer and then displayed in real-time tabular or graphical format (software and cable included). Optional printer cable (sold separately on page 21) enables scanner (benchtop model only) to be connected directly to a printer, without using a computer. Datalogging and printing intervals can be set from four seconds to 99 minutes, 59 seconds.



Live, real-time graphs auto-adjust the time on the Y-axis.

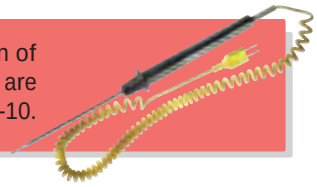
View channel temperature—push the "virtual buttons" to change thermometer functions

FREE Real-Time Logging Software

Each unit includes FREE Windows® 95/98NT/2000/XP-compatible software on CD-ROM that controls and displays up to 12 scanners simultaneously. Logged data may be saved to a file and imported into spreadsheet or word processor. Live updating graph shows time and temperature!

Back view of benchtop model; accepts any thermocouple probe with ANSI miniconnectors.

A wide selection of thermocouple probes are available on pages 7-10.



Wall-mount 12-channel scanning thermometer

Specifications

Input type and range
- J: –392 to 1832°F (–200 to 1000°C)
- K: –418 to 2501°F (–250 to 1372°C)
- T: –418 to 752°F (–250 to 400°C)
- E: –418 to 1832°F (–250 to 1000°C)
- N: –418 to 2372°F (–250 to 1300°C)
- R: 32 to 3214°F (0 to 1768°C)
- S: 32 to 3214°F (0 to 1768°C)
- B: 392 to 3272°F (200 to 1800°C)

Accuracy
- J, K, T, E, N: ±0.8°F (±0.5°C), and ±0.1% of reading above –238°F (–150°C), ±2°F (±1°C), and ±0.25% of reading below –238°F (–150°C)
- R, S, B: ±4°F (±2°C) ±0.1% of reading

Resolution: 0.1°/1° selectable up to 999.9°; 1° above 1000°; autorange to 1° below –150°C

Display: 12-character alphanumeric LCD

Display update rate: 3 seconds/channel

Scan rate: from 4 seconds to 99 minutes, 59 seconds

Alarm output (Wall-mount model only): SPDT high/low relays are rated at 250 VAC 2A or 2A at 30 VDC resistive.

Digital output
- Both models: RS-232, ASCII format, baud rate 19.2 K, RJ11 connector;
- Benchtop model only: Centronics parallel printer output; DB25F connector

Dimensions
- Benchtop: 10½"W x 3½"H x 7½"D (26.7 x 8.9 x 19.1 cm)
- Wall-mount: 8½"W x 11¼"H x 5½"D (21.6 x 28.6 x 14 cm)

Power
- Benchtop: 115 or 230 VAC, 10 to 28 VDC, or 7 to 20 VAC 500 mA
- Wall-mount: 115 or 230 VAC, 90 to 240 VAC, 50/60 Hz

ISO9001:2000 CERTIFIED SUPPLIER

Ordering Information

CE IP65 UL 2 year warranty

Catalog number	Description	Included power supply
WD-69200-00	12-channel benchtop	115 VAC, 50/60 Hz
WD-69202-30		230 VAC, 50/60 Hz
WD-69210-00	12-channel wall-mount	115 VAC, 50/60 Hz
WD-69212-30		230 VAC, 50/60 Hz

WD-22050-04 Parallel printer cable for benchtop model only, 36M/DB25M

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

To order a NIST-traceable calibration certificate with your 12-channel scanner, see page 1.

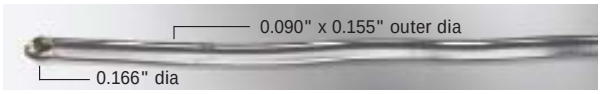
Accessories

Probes with miniconnectors have grounded junction, 316 SS sheath, and glass-filled nylon handle that measures 5.5"L. Handles feature relief spring that protects the cable connection against damage due to repeated flexing and tugging. Include 5-ft coiled cable. For more details on these probes and other probes, see pages 7-10.

Catalog number	Type	Temperature range
WD-08517-55	J	–310 to 1400°F (–190 to 760°C)
WD-08516-55	K	–418 to 1652°F (–250 to 900°C)
WD-08500-55	T	–418 to 752°F (–250 to 400°C)
WD-08512-55	E	–418 to 1600°F (–250 to 871°C)

Flexible Insulated-Wire Probes

PVC insulated probes feature a PVC-coated tip, 10-ft flexible 20-gauge (0.032" dia) wire, and miniconnector. No handle is included. Short-term immersible. Ungrounded junction. Response time is 25 sec.



Catalog number	Type	Temperature range
WD-08466-02	J	–310 to 221°F (–190 to 105°C)
WD-08466-04	K	–418 to 221°F (–250 to 105°C)
WD-08466-06	T	–418 to 221°F (–250 to 105°C)

Digi-Sense® Temperature Controllers

Plain English menus with two-line display simultaneously show measured value and set point

Outlet receptacle allows direct plug-in of heating devices

Advanced models feature ramp & soak and RS-232 communications for computer control

These temperature controllers can be used for a wide variety of applications. Choose from Standard or Advanced models. Both controller models provide excellent control accuracy and power capabilities, making them ideal for pilot process plants, R & D labs, or for OEM requirements. Multiple control modes from simple on/off to sophisticated autotuning PID for more accurate control. Use as a benchtop controller or panel mount with the optional panel mount kit, sold separately under "Accessories" on page 23.

Standard Models accept eight thermocouple types with mini-connector.

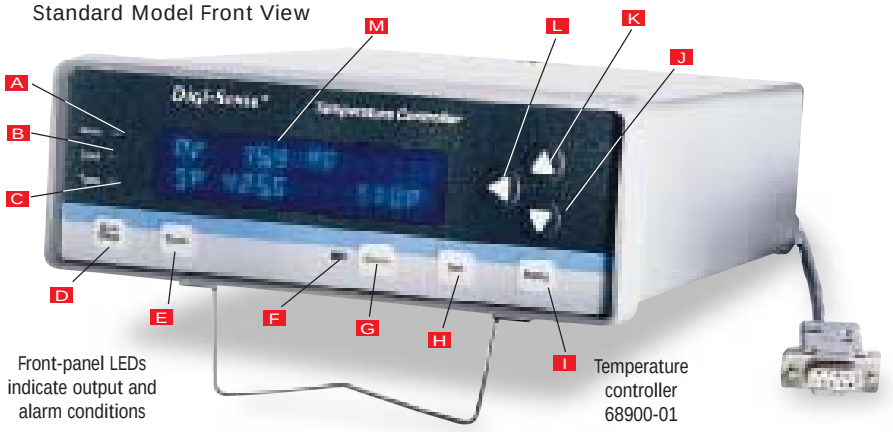
Advanced Models accept eight thermocouple types with mini-connector plus 400- and 700-series thermistor probes with ¼" phono plug, and 100 Ω Pt RTD probes with three-pin connector. These controllers also feature a higher heater output capacity, nine-segment ramp & soak profiling for more complicated processes, RS-232 computer interface, free software, alarm relay with adjusted hysteresis, and 4-20 mA and 1-5 V output for connection to a recorder or datalogger.

Instrument Features for Both Models—Rear panel output receptacle for direct plug-in of heaters and other resistive devices. Field calibration helps to improve system accuracy by entering the offset value to correct for individual probe error. Simultaneously view both the measured and set point on the two-line alphanumeric display. Temperature scale selectable to read in °F, °C, K (Kelvin), or °R (Rankine).

Front panel LEDs indicate output and alarm conditions. Multiple control modes from simple on/off control to sophisticated autotuning PID control. Nonvolatile EEPROM memory stores setup and operating parameters, even if power is lost. The 115 VAC models include a 6-ft power cord and U.S. standard plug and receptacle; the 230 VAC models feature an IEC cord set and receptacle (specify country of destination when ordering).

Multiple Safety Features—Output power to load device is automatically shut down in the event of a broken sensor or control loop break. Over-temperature protection shuts down the system if the user settable over-temperature or timer is exceeded. Outlet power receptacle is fused separately from the controller for added safety. Audible and visual out-of-range alarms are also included.

Standard Model Front View

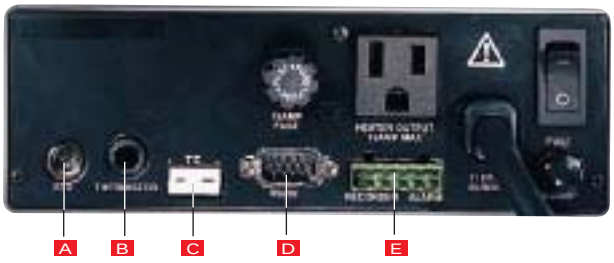


Front-panel LEDs indicate output and alarm conditions

Temperature controller 68900-01

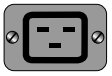
- A Heat ON indicator
- B Cool ON indicator
- C Autotune indicator
- D Start/stop button
- E Autotune button
- F Alarm indicator
- G Alarm silence button
- H Set point change button
- I Setup menu button
- J Decrement
- K Increment
- L Cursor control
- M 2 line x 16 character vacuum fluorescent display

Advanced Model Back View



230 volt models use IEC connectors for power output:

model 68900-03 (10 amp) or

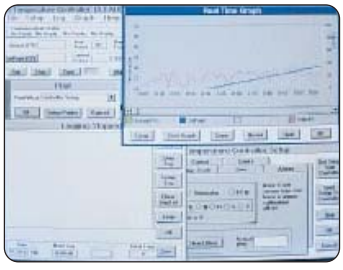


model 68900-13 (15 amp)

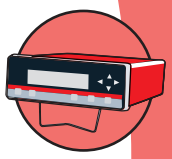
- A 3-pin RTD connection (Advanced models only)
- B YSI 400 or 700 series thermistor (Advanced models only)
- C Thermocouple mini-connection
- D Bidirectional RS-232 connection
- E Removable plug for output and alarm relay

FREE Software (included with Advanced models)

Control all parameters of your controller through a computer. Program setup files for later use—software allows you to load, save, and print multiple setup files. Other software features include logging of measured temperature, set point temperature, and alarm status in real time; help menu; and the ability to interface with other Windows®-based programs.



Software features real-time graphing and simple setup of ramp & soak programs



Specifications

230 VAC models only · ISO 9001:2000 CERTIFIED SUPPLIER · ITS-90 · 2 year warranty

Thermocouple

Input type and range
- J: –310 to 1832°F (–190 to 1000°C)
- K: –328 to 2502°F (–200 to 1372°C)
- T: –328 to 752°F (–200 to 400°C)
- E: –328 to 1832°F (–200 to 1000°C)
- N: –328 to 2372°F (–200 to 1300°C)
- B: 392 to 3272°F (200 to 1800°C)
- R: 32 to 3214°F (0 to 1768°C)
- S: 32 to 3214°F (0 to 1768°C)

Accuracy
- Types J, K, T, E, and N: ±0.1% reading, and ±0.7°F (0.4°C) above –248°F (–100°C); ±0.1% reading, and ±1.8°F (1°C) below –248°F (–100°C)
- Types B, R, and S: ±0.1% of reading, and ±1.8°F (1.0°C)

Resolution: 0.1°; 1° above 999.9°; 1° below –99.9°

Thermistor (Advanced models only)

Input type and range
- 400 series: 32 to 212°F (0 to 100°C)
- 700 series: 32 to 212°F (0 to 100°C)

Accuracy: ±0.1% of reading, and ±0.7°F (0.4°C)

Resolution: 0.1°; 1° above 999.9°; 1° below –99.9°

100 Ω Pt RTD (Advanced models only)

Range: –328 to 1562°F (–200 to 850°C)

Accuracy: ±0.1% of reading, and ±0.7°F (0.4°C)

Resolution: 0.1°; 1° above 999.9°; 1° below –99.9°

General

Display: vacuum fluorescent, two lines, 16-character alphanumeric, 3⁄16"H each

Operating ambient: 32 to 104°F (0 to 40°C); 0 to 90% RH, noncondensing

Recorder output†: 4-20 mA or 20-4 mA, selectable

Control output
- (Use a 250 Ω resistor to convert to a 1 to 5 V signal)
- Standard models: powered receptacle rated for 115/230 VAC, 10 A max
- Advanced models: powered receptacle rated for 115/230 VAC, 15 A max

Alarm output†: one SPDT relay rated for 230 VAC, 2 A max; resistive

Digital output†: isolated RS-232; 300 to 9600 baud

Dimensions: 7¼"W x 3¾"H x 10"D (18.5 x 9.4 x 25.4 cm)

†Advanced models only

Ordering Information

Catalog number	Description	Control output	Control type	Ramp & soak	Recorder output	Power (49 to 61 Hz)
WD-68900-01	Standard controller	1150 watts	On/off, programmable PID, autotune PID	No	None	115 VAC, 10 A max
WD-68900-03		2300 watts				230 VAC, 10 A max
WD-68900-11	Advanced controller	1725 watts		Yes; 9 programs, 16-segment each	4 to 20/20 to 4 mA, selectable	115 VAC, 15 A max
WD-68900-13		3450 watts				230 VAC, 15 A max

Accessories

WD-89000-50 Panel-mount kit

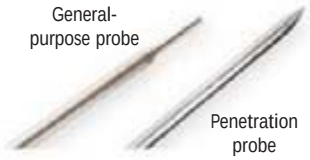
WD-68900-98 Heater sizing software for models 68900-01 and -03 (included with Advanced models). Aids in selecting the appropriate heater components

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

To order a NIST-traceable calibration certificate with your controller, see page 1.

Some of Our Most Popular Thermocouple Probes

All probes include a 5-ft coiled cord with strain relief spring that protects from repeated flexing and tugging. Ergonomic, easy-to-grip glass-filled nylon handle provides maximum insulation and impact resistance; fingerstops prevent fingers from sliding and prevent probe from rolling. Rugged thermoset plastic miniconnector also included. For additional probes, see pages 7-10.



General-purpose probe

Penetration probe

Probe type	Temp range	General-purpose (5"L) Catalog number	Penetration (4"L) Catalog number
J	–310 to 1400°F (–190 to 760°C)	WD-08517-55	WD-08517-65
K	–418 to 1652°F (–250 to 900°C)	WD-08516-55	WD-08516-65
T	–418°F to 752°F (–250 to 400°C)	WD-08500-55	WD-08500-65
E	–418°F to 1600°F (–250 to 871°C)	WD-08512-55	WD-08512-65

Penetration-tip thermistor probe

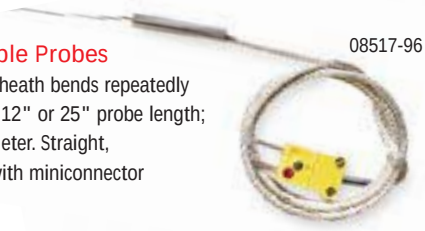
Thermistor Probes (for Advanced models only)

Probes feature 316 SS sheath with sturdy 5.25"L glass-filled nylon handle and 5-ft coiled cable with ¼" phone plug. Accurate to ±0.1°C from 0 to 70°C. For a complete selection of thermistor probes, see pages 15-16.

Catalog no.	Description	Temp range
WD-93824-00	General-purpose thermistor immersion probe	–22 to 212°F (–30 to 100°C)
WD-93824-12	General-purpose Teflon®-coated thermistor probe	
WD-93824-30	Thermistor probe with penetration tip	

Flexible Thermocouple Probes

MgO-filled Inconel® 600 sheath bends repeatedly without breaking. Choose 12" or 25" probe length; probes are 0.040" in diameter. Straight, 3-ft tinned-copper cable with miniconnector and grounded junction.



08517-96

Catalog number	Type	Length	Temp range
WD-08517-96	J	12"	–200 to 1600°F (–128 to 871°C)
WD-08516-96	K		0 to 2012°F (–17 to 1100°C)
WD-08500-96	T		–400 to 600°F (–240 to 315°C)
WD-08512-96	E		–200 to 1800°F (–128 to 982°C)
WD-08517-97	J	25"	–200 to 1600°F (–128 to 871°C)
WD-08516-97	K		0 to 2012°F (–17 to 1100°C)

Penetration-tip RTD probe

RTD Probes (for Advanced models only)

Probes feature 316 SS sheath and 5"L glass-filled nylon handle with 5-ft coiled cable and three-pin connector. For complete selection of RTD probes, see page 13.

Catalog number	Description	Temp range
WD-08117-70	General-purpose RTD probe	–58 to 932°F (–50 to 500°C)
WD-08117-87	Teflon® PFA-insulated RTD probe	–58 to 500°F (–50 to 260°C)
WD-08117-85	RTD probe with penetration-tip	–58 to 932°F (–50 to 500°C)

Infrared Thermometers

Why use noncontact infrared thermometers?

Noncontact infrared (IR) thermometers use infrared technology to quickly and conveniently measure the surface temperature of objects. They provide fast temperature readings without physically touching the object. You simply aim, pull the trigger, and read the temperature on the LCD.

Lightweight, compact, and easy-to-use IR thermometers can safely measure hot, hazardous, or hard-to-reach surfaces without contaminating or damaging the object. Also, infrared thermometers can provide several readings per second, as compared to contact methods where each measurement can take several minutes.

Typical applications

Industrial/Electrical: Monitor steam systems, boiler operations, and motor/engine cooling systems performance; detect hot spots in electrical systems, panels and motor bearings.

Heating and air conditioning: Monitor furnace and duct leakage; detect insulation breakdown; check ceilings, walls and floors for proper room temperature, heat loss and gain.

Food safety: Fast and convenient screening tool for both cold and hot foods for Food Safety and HACCP. No contamination or damage to the product. Easily take temperature of products moving on conveyors or hard-to-reach places. Verify equipment performance, sanitation and process temperature conditions. Scan cooling systems, refrigerated display cases, trucks and storage areas before loading or stacking.

Agriculture: Monitor plant temperatures for stress.

Mini TempTestr® IR Thermometer

Economical noncontact thermometer fits right in your pocket!

This pocket-size infrared thermometer takes surface temperature readings of any liquid, solid, or semisolid in less than one second. Operation is simple—turn it on, point at sample, and take reading. Noncontact temperature measurements are ideal for food preparation, life sciences, field use, clean rooms, and for fast inspections.

Features include switchable °F/°C display, Hold function, minimum/maximum memory readings, adjustable emissivity, low-battery indication, flip-open stand and soft touch keypad.

What's included: metal storage case, wrist strap, and spare battery.

Specifications & Ordering Information

1 year warranty

Catalog number	WD-39642-00
Range	–27 to 428°F (–33 to 220°C)
Accuracy	±2% of reading or ±4°F (±2°C), whichever is greater
Response time	One sec
Emissivity	Adjustable from 0.01 to 1.00
Laser sighting	None
Distance-to-target size ratio	1:1
Power	One 3 V battery (included)
Dimensions	2½"L x 1½"W x ½"H

TempTestr® IR Thermometer

Laser sighting pinpoints your exact target area

Ergonomic design allows for easy gripping and one-handed operation

Taking temperature measurements has never been easier—just point the thermometer at your target and push one button! The TempTestr IR thermometer is ideal for use in the home, office, field, or lab—anywhere you need to quickly and accurately measure surface temperatures. Results in under ½ second. Hold function freezes reading for seven seconds.

What's included: one 9 V battery.

ISO9001:2000 CERTIFIED SUPPLIER

Specifications & Ordering Information

1 year warranty

Catalog number	WD-35626-10
Range	0 to 500°F (–18 to 260°C)
Accuracy	±2% or ±3°F (2°C) from 77 to 500°F (25 to 260°C); ±5°F (3°C) from 30 to 77°F (–1 to 25°C); ±7°F (4°C) from 0 to 30°F (–18 to –1°C)
Response time	500 msec, 95% response
Emissivity	Preset at 0.95
Laser sighting	Class II
Distance-to-spot-size ratio	6:1
Power	One 9 V battery (included)
Dimensions	7¼"L x 1¾"W x 1½"H

Accessories

WD-35625-80 Carrying case for TempTestr IR thermometer

Infrared Thermometers

Digi-Sense® Palm-Sized Infrared Thermometer

Laser sighting and adjustable emissivity at an economical price

Compact, ergonomic design provides a comfortable fit during use

Fits perfectly in your hand or pocket

This infrared thermometer provides quick and accurate temperature measurements. View the current temperature, temperature scale (°F or °C), and battery life icon on the large LCD. Two battery compartments provide power to the thermometer and laser separately. This gives the flexibility to measure temperature without the laser sighting if the laser battery is weak. Other features include selectable °F/°C, min/max measurements, lock function for continuous monitoring, automatic data hold, auto off, and battery life icon.

What's included: two CR2032 batteries.

Specifications & Ordering Information

CE 1 year warranty

Catalog number	WD-39643-00
Range	–27 to 482°F (–33 to 250°C)
Accuracy	±2% or ±3.6°F (±2°C)
Response time	1 sec, 90% response
Emissivity	Adjustable from 0.5 to 1
Laser sighting	Class II
Distance-to-target size ratio	8:1
Power	Two CR2032 batteries (included)
Dimensions	4½"L x 2"W x ¾"H

Digi-Sense® IR Thermometer with Type K Input

Use as either an IR or contact thermometer.

Measure both noncontact and contact temperature (thermocouple sold separately)

Display infrared and contact temperatures simultaneously

Distance-to-target-ratio of 11 to 1 for longer distance measurements

Measure infrared and contact temperature with this thermometer. Meter has a thermocouple port to accommodate a type K thermocouple when contact temperature is a must (thermocouple sold separately below right). The adjustable emissivity provides greater measurement capabilities for a wider selection of surface measurements. The Class II laser sighting has the capability of being turned off in applications where the laser is unnecessary. Activate the bright, amber backlight when measuring in low-lit areas.

The LCD simultaneously displays the current temperature in °F or °C, the pre-selected emissivity, the laser scan, and battery life icons. Other features include min/max and average, min/max differential, lock function for continuous measurement, high and low audible and visual alarm limits, automatic data hold, and auto off.

What's included: two AAA batteries.

Specifications & Ordering Information

CE 1 year warranty

Catalog number	WD-39644-00	
Mode	Infrared	Contact (with optional thermocouple)
Range	–76 to 932°F (–60 to 500°C)	–83.2 to 1999°F (–64 to 1400°C)
Accuracy	±2% or ±3.6°F (±2°C)	±1% or ±1.8°F (±1°C)
Response time	1 sec, 90% response	
Emissivity	Adjustable from 0.1 to 1	—
Laser sighting	Class II	—
Distance-to-target size ratio	11:1	—
Power	Two AAA batteries (included)	
Dimensions	3"L x 1½"W x 6"H	

Accessories

WD-08516-55 Type K thermocouple probe, general purpose. Includes 5"L stainless steel sheath and 5-ft coiled cable.

InfraPro®
Infrared Thermometers

Easily measure moving objects and dangerous targets from a distance

Single, extra bright laser targets your measurement area

InfraPro 3, 4, and 5 log readings and feature an RTD input to take contact temperatures

Rugged enough for industrial use, yet compact and lightweight enough to be carried around with you, these infrared thermometers are extremely easy to use: just aim, pull the trigger, and read the display. The 4½-digit backlit display shows temperature readings in °F or °C; low-battery indication; and hold, scan, and max. Display holds for 7 seconds. Underrange and overrange conditions are also indicated on the display.

Advanced models 35639-20, -30, and -40 indicate max, min, dif, avg, emissivity, high alarm, low alarm, probe, log, and recall. Other features include an RTD input, 12 datalogging points, adjustable emissivity, and a rubber grip and nose that improve resistance to shock, damage, water, and dust. Extra-bright laser is visible in indoor and outdoor applications. InfraPro 5 is rated intrinsically safe for Class I Division 1, Groups A, B, C, D and Class I locations, Zone 0, AEx ia IIC, T4 at 50°C

What's included: one 9 V battery and a hard carrying case. InfraPro 5 includes an intrinsically safe RTD contact probe.

35639-20

Use InfraPro in applications such as...

Measuring industrial equipment that is too hot to touch.

Measuring panels that are difficult to evaluate with contact sensors.

Economical InfraPro 1 meter has fixed emissivity for simplicity of use.

Advanced InfraPro 3, 4, and 5 meters have adjustable emissivity for measuring a wide variety of substances, and datalogging capabilities for storing measurements in the field.

The intrinsically safe InfraPro 5 meter includes remote RTD probe 35629-50 with a penetration tip.

Specifications & Ordering Information

ISO9001:2000 CERTIFIED SUPPLIER · CE · 1 year warranty

Catalog number	WD-35639-00	WD-35639-20	WD-35639-30	WD-35639-40
Description	Infrapro 1	Infrapro 3 advanced	Infrapro 4 advanced	Infrapro 5 intrinsically safe
Range	–25 to 999°F (–32 to 535°C)	–25 to 1100°F (–32 to 600°C)	–25 to 1400°F (–32 to 760°C)	–25 to 1400°F (–32 to 760°C)
Resolution	0.5°F (0.2°C)	0.1°F (0.1°C)		
Accuracy	±1% of the reading or ±2°F (±1°C) whichever is greater			
Response time	500 msec			
Emissivity	Fixed at 0.95	0.10 to 1.00	0.10 to 1.00	0.10 to 1.00
Laser sighting	Class II laser	Class II laser	Class II laser	Class II laser
Distance-to-target ratio	12:1	30:1	50:1	50:1
Power	One 9 V battery (included)			
Contact probe	—	Optional	Optional	Included
Dimensions	8"L x 6"W x 2"H			

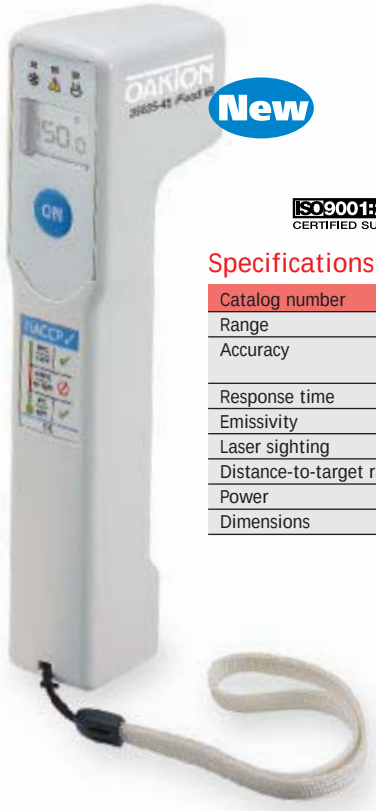
WD-35629-50 Contact probe for 35639-20 and -30. Range is –40 to 500°F; 40"L coiled cable
WD-35629-90 Soft carrying case with integral belt loop and Velcro® closure

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

Ensure the accuracy of your infrared equipment today. See page 1 for more information on our NIST-traceable calibration services.

Food Safety Infrared Thermometers

TempTestr® IR Food Thermometer



Ideal for food inspections and HACCP programs

Non-contact measurement eliminates the risk of cross-contamination

Scan numerous surfaces quickly and easily

Sealed, hand-washable IP54 housing

Temperature measurement is essential when ensuring proper food storage, cooking and serving environments, and is required by the FDA. Quick checks with a non-contact thermometer can remove the hazard of cross-contamination and reduce the time a traditional probe requires.

This thermometer provides safe, non-contact readings in only ½ second. Use to measure food surfaces in the HACCP temperature danger zone (40 to 140°F or 4 to 60°C), the critical range where harmful bacteria grows most rapidly. LEDs quickly indicate if food temperatures are in the bacterial growth safety zone. Green LED light indicates food-safe hot and cold holding temperatures. Red LED light indicates that food is exposed to potentially dangerous temperatures and within the food temperature danger zone. Investigate further with a probe thermometer for internal temperatures. LED target system illuminates the exact measurement area. Compact design allows for easy one-handed operation.

What's included: one 9 V battery and wrist strap.

ISO 9001:2000 CERTIFIED SUPPLIER · CE · IP54 · 1 year warranty

Specifications & Ordering Information

Catalog number	WD-35625-45
Range	–20 to 400°F (–30 to 200°C)
Accuracy	±2°F (1±1°C), Between 32 to150°F (0 to 65°C):
Response time	0.5 second
Emissivity	Preset at 0.97
Laser sighting	LED (non-laser)
Distance-to-target ratio	2.5:1
Power	One 9 V battery (included)
Dimensions	2"L x 1¼"W x 6"H

Food Safety IR Thermometer

A combination contact/noncontact thermometer with timer for all food applications

Go/no-go LEDs provide quick check of HACCP food zones

Sealed, hand-washable IP54 housing

Check critical food temperatures and monitor HACCP food safety zones with this combination contact/noncontact thermometer. LEDs rapidly indicate if food temperature is in the bacterial growth safety zone. Green lights indicate safe temperatures below 40°F (4°C) and above 140°F (60°C). Red light indicates the HACCP danger zone between 40 to 140°F (4 to 60°C). The contact penetration probe swings out for internal temperature checks, then folds in for storage. IR mode provides quick, noncontact surface measurements and stores maximum reading. Target illumination indicates target measurement area and is ideal for close working distances of 2 to 12". Built-in countdown timer with alarm monitors cooking and cooling intervals and HACCP exposure times—set countdown timer to a maximum of eight hours.

What's included: battery, carrying case, and quick reference card.

Target illumination clearly indicates target area

Contact penetration probe swings out for fast temperature checks

Specifications & Ordering Information

ISO 9001:2000 CERTIFIED SUPPLIER · CE · IP54 · 1 year warranty

Catalog number	WD-35625-40	
Mode	Infrared	Contact
Range	30 to 525°F (–35 to 275°C)	–40 to 390°F (–40 to 200°C)
Accuracy	±2°F (±1°C) from 32 to 150°F (0 to 65°C)	±1°F (±0.5°C) from 32 to 150°F (0 to 65°C)
Response time	500 msec	5 sec
Emissivity	Preset at 0.97	
Laser sighting	LED (non-laser)	
Distance-to-target-size ratio	2.5:1	
Power	One 9 V battery (included)	
Dimensions	Overall: 2"L x 1¼"W x 6½"H; Contact probe: 3¼"L x ⅛" dia	

WD-35625-70 Replacement probe for thermometer 35625-40
WD-86106-10 Antimicrobial sanitizing wipes. Box of 100

TempLog & RH/TempLog Dataloggers

Automatically log temperature and humidity readings for days, weeks, even months, then download data to your computer or printer!

35710-00

35710-10

35710-50 Software

Large LCD display
lets you immediately view current conditions; displays min/max values by day(s) or hour(s)

Selectable sampling rate
sample from once per 10 seconds to once per two hours (software required)

External sensor input
for a temperature, contact, voltage, pH, or current sensor

These loggers store up to 16,000 measurements, allowing you to track important temperature, humidity, and other process data for months. Loggers are ideal for shipping, storage, laboratories, factories, refrigerators, freezers, incubators, desiccators, greenhouses, and more. The two-digit LCD shows current conditions—minimum and maximum readings are available at the touch of a button. Display flashes if set limits are passed.

Models 35710-60 and -00 record temperature and feature a water-resistant and dustproof IP65-rated housing. Models 35710-62 and -10 record temperature and humidity and feature a dustproof IP60-rated housing.

Optional external sensors (sold separately below) allow an additional parameter to be recorded. Connect current and voltage sensors with a transmitter to log other processes such as pressure, flow, pH, and level.

Software lets you set sampling rate, create graphs, and customize logging parameters. Software/cable package is required for use with additional dataloggers (sold separately below).

Kits include: one datalogger, CD-ROM software, and cable.

Specifications & Ordering Information

Memory: 16,000 data points
Sampling rate: selectable via software from once per 10 seconds to two hours
Display: 2-digit LCD; ⅜" H

Output
Infrared: IRDA (infrared data assembly) interface to printer or computer with IRDA port
RS-232: cable connection to your computer (order cable/software package separately)
Power: 3.6 V lithium battery (included)
Dimensions: 1"D x 2¾" dia

IP65 35710-00, 60 IP60 35710-10, 62 CE

Parameters	No. of channels	Range	Resolution	Accuracy	Datalogger kits Catalog number	Dataloggers only Catalog number
Temperature	One internal, one external	–22 to 122°F (–30 to 50°C)	1°F (0.5°C)	±1.1°F (±0.6°C)	WD-35710-60	WD-35710-00
Temperature Humidity	One internal, one external	–22 to 122°F (–30 to 50°C) 0 to 100% RH	1°F (0.5°C) 1% RH	±1.1°F (±0.6°C) ±3% RH from 0 to 90% RH; ±6% RH from 90 to 100% RH	WD-35710-62	WD-35710-10

External Sensors can be plugged into a port located on each logger. Select from temperature, current, voltage, contact, or pH sensors. Each can be used to log and display additional external readings on your computer.

Temperature sensor is made of stainless steel and can be immersed in liquids or soil or used to measure the temperature of air. Current, voltage, and contact sensors can be scaled to match range and units of your transmitter or instrument output—use to log pH, conductivity, pressure, and more! Each sensor includes an 8.2-ft (2.5-m) cable.

Catalog number	Description
WD-35710-70	Temperature probe, –60 to 212°F; 3¼"L x ¼" dia; 6-ft cable
WD-35710-72	Current sensor, 0 to 20 mA
WD-35710-74	Voltage sensor, 0 to 10 V
WD-35710-76	Contact closure sensor, open/close
WD-35710-78	pH adapter, 0 to 14 pH. pH electrode with BNC required

Accessories

WD-10374-50 Infrared printer includes one roll of paper and four AA batteries. Use infrared port to quickly download data to your portable printer

WD-10374-52 Replacement printer paper. Pack of six rolls

WD-35710-50 Microlab software and 8-ft cable, included with kits. Windows® 95/98/2000NT/XP compatible

WD-35710-65 Replacement datalogger battery, 3.6 V

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

To order a NIST-traceable calibration certificate with your datalogger, see page 1.

LoggerPlus Wireless Transmitting Systems

Remote real-time monitoring of up to 200 dataloggers on one computer

Computer can receive data from loggers up to 400 feet (120 meters) away!

LoggerPlus cradle
transforms your logger into a wireless (RF) transmitter

LoggerPlus receiver
a small RF device that connects to your PC to receive wireless data from your loggers

Required System Components
- A Datalogger (up to 200 on one computer)
- B Cradle (up to 200 on one computer)
- C Wireless receiver and software

A TempLog and RH/TempLog Dataloggers

These loggers store up to 16,000 measurements at selectable intervals. The LCD displays current conditions. Choose from measuring temperature, temperature and humidity, or one of many processes by choosing an optional external sensor (see below right).

Note: Sensors must be used with datalogger cradle ("B" below) and AC adapter in order for data to be transmitted to computer monitoring station.

Specifications & Ordering Information for Dataloggers

Memory: 16,000 data points
Sampling rate: selectable via software from once per 10 seconds to two hours
Power: 3.6 V lithium battery (included)
Dimensions: 1"D x 2¾" dia
See page 28 for further specifications.

Catalog number	Description
WD-35710-00	TempLog datalogger
WD-35710-10	RH/TempLog datalogger

B Datalogger Cradle

The datalogger cradle serves as a mount and wireless transmitter for the dataloggers. Each cradle can send a signal up to 400 ft (125 m) outdoors, or 125 ft (40 m) indoors and is tagged with an ID number. Cradle transmits data at user-set intervals in different time slots according to the ID numbers in order to prevent data collision between two or more cradles. Cradle features audible alarm and serial communication. Note: One cradle is required for each datalogger used.

What's included: one 3.6 V lithium battery and 110 VAC adapter. Each cradle has one port for optional external sensor.

Catalog number	Description
WD-35710-20	Datalogger sensor cradle

C Wireless (RF) Receiver and Software

Wireless receiver connects to monitoring station PC with range of 400 ft (125 m) outdoors, or 125 ft (40 m) indoors. MicroLab Plus™ software serves as a color-coded interface showing the status of up to 200 loggers total, six on one screen. Use it to store data or set up logger ID, alarm levels, or sampling rate (once per minute to once per hour). Display temperature, humidity, and low battery—easy-to-read graphics let you know if any logger is in alarm condition or not.

What's included: MicroLab Plus software, serial communications cable (purchase optional USB communication cable separately below), and one 110 VAC adapter.

Catalog number	Description
WD-35710-25	Wireless receiver and software

Accessories

WD-35710-30 Antenna helps to strengthen reception
WD-35710-69 USB communication cable
WD-35710-63 Replacement cradle AC adapter, 110 VAC
WD-35710-64 Cradle AC adapter, 220 VAC
WD-35710-67 Replacement serial communications cable
WD-35710-80 Replacement receiver AC adapter, 110 VAC
WD-35710-61 Receiver AC adapter, 220 VAC

External Sensors log temperature, mA, voltage, pH, or activation of a contact closure. See page 28 for further specifications.

Catalog number	Description
WD-35710-70	Temperature probe, –60 to 212°F; 3¼"L x ¼" dia; 6-ft cable
WD-35710-72	Current sensor, 0 to 20 mA
WD-35710-74	Voltage sensor, 0 to 10 V
WD-35710-76	Contact closure sensor, open/close
WD-35710-78	pH adapter, 0 to 14 pH. pH electrode with BNC required

Minidrum and Standard Hygrothermographs

Compact minidrum units fit almost anywhere

All models feature a human hair bundle humidity sensor and an aged bimetallic strip temperature sensor. Units are ideal for use in laboratories, libraries, museums, greenhouses, or even computer and food storage rooms.

A Domed Minidrum Hygrothermograph

Use this hygrothermograph in tight places such as under fume hoods or inside environmental chambers. Quartz-controlled drive mechanism rotates the drum at a constant speed; operates for six months on one AA battery (included). The humidity sensor has dual human hair bundles for greater accuracy and is coupled to the pens through a mechanical system of levers.

A

B Economical Minidrum Hygrothermograph

This hygrothermograph is so compact it will fit almost anywhere. Hygrothermograph employs a quartz-controlled drive mechanism for constant speed; operates on one AA battery (included). Acrylic cover latches securely to protect paper and pens.

B

C

Specifications & Ordering Information

Response time: 15 minutes for 45% of reading (all models)

CE

Model type	A Domed minidrum	B Economical minidrum	C Three-speed standard
Catalog number	**WD-08369-50**	**WD-08369-70**	**WD-37250-00**
Humidity specifications			
Range	5 to 90% RH		
Accuracy	±5% from 10 to 90% RH, ±7% from 5 to 10% RH		±3% from 10 to 90% RH, ±5% from 5 to 10% RH
Sensor type	Two human hair bundles	One human hair bundle	One human hair bundle
Chart graduations	5% RH	5% RH	1% RH
Temperature specifications			
Range	22 to 104°F (–6 to 40°C)	22 to 104°F (–6 to 40°C)	14 to 122°F (–10 to 50°C)
Accuracy	±3.6°F (2°C)	±3.6°F (2°C)	±1.8°F (1°C)
Sensor type	Aged bimetallic strip		
Chart graduations	2°F (2°C)	2°F (2°C)	2°F (1°C)
General specifications			
Chart size	3.63"H x 8.19"L	3.63"H x 8.19"L	6.63"H x 11.50"L
Chart rotation	7 day (172 hour)	7 day (172 hour)	1 day (26 hr), 7 day (172 hr), or 32 day (810 hr)
Power supply	One 1.5 V AA battery	One 1.5 V AA battery	Two 1.5 V C batteries
Dimensions	7.50"H x 5.00" dia	6.00"W x 7.38"H x 3.88"D	13.25"W x 11.50"H x 5.875"D

Chart Paper

Catalog number	Use with model type	Temperature range	Rotation	Increments	Qty/pk
WD-08369-61	A or B	22 to 104°F	7 day	2 hour	100
WD-08369-56		–6 to 40°C	7 day	2 hour	100
WD-08368-11	C	14 to 122°F	1 day	15 minute	100
WD-08368-21			7 day	2 hour	100
WD-08368-23			32 day	6 hour	25
WD-08368-31	C	–10 to 50°C	1 day	15 minute	100
WD-08368-41			7 day	2 hour	100
WD-08368-43			32 day	6 hour	25

Accessories

WD-08368-75 Replacement pens, blue. Pack of six
WD-08368-80 Replacement pens, red. Pack of six
WD-09376-02 Replacement batteries for model C; size C. Pack of four
WD-09376-01 Replacement batteries for models A and B; AA. Pack of four
WD-37250-50 Optional axial fan for model C only
WD-01578-02 Transformer. Use to operate axial fan at 220 VAC, 100 W

C Three-Speed Standard Hygrothermograph

Select 1-, 7-, or 32-day operation with the flip of a switch. A flashing LED indicates that the unit is operational. Unit uses two C batteries (included) for up to six months of continuous operation. Test battery condition with the press of a button. The quartz-controlled drive mechanism consistently rotates chart drum even when batteries are weak. Order the optional axial fan for more uniform measurements in fluctuating environments.

What's included: two felt tip pens (one blue and one red), one 7-day sheet of chart paper, and appropriate batteries.

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

Ensure the accuracy of your humidity equipment

WD-17030-20 NIST-traceable humidity certificate

Service includes NIST-traceable calibration certificate with before and after test data calibrated at three humidity points (30, 60, and 80% RH) and one temperature point at ambient.

Timers and Stopwatches

A TechClip™ Stopwatch

Five functions in one handy unit! Features 24-hour stopwatch; real time clock with date, month, day of the week; Fahrenheit thermometer; built-in compass; and audible alarm. Clip attaches to keychain, belt loop, back pack, or clothing.

B Easy-Grip Digital Stopwatch

Features single event, start/stop, and cumulative split timing modes. Real time clock with date, month, day of week; selectable 12/24 hour clock, and alarm. Case is watertight to 75 feet.

C NIST-Traceable Digital Stopwatch

Same features as "B" above, but also includes an NIST-traceable certificate confirming accuracy specifications, with before and after test data in secs/day.

D Dual-Channel Timer/Clock

Dual LCD features 1" high, oversized digits and tilts for easy viewing. Two channels can be used and displayed together: use one to count up and one to count down, or use both to count down two different events. Alarm sounds at end of countdown. Built-in clock displays time of day. Set on tabletop, mount on wall, or use magnetic backing to stick to metallic surfaces.

E NIST-Traceable Timer/Clock

Same features as "D" at left, but also includes an NIST-traceable certificate confirming accuracy specifications, with before and after test data in secs/day.

F Thermometer/Timer

View temperature (°F/°C selectable), time, and set point simultaneously. Easily program the temperature set point, time set point, and start/stop memory. Built-in alarm for both temperature and time—once the alarm sounds, the timer counts up from set point. Display pivots on magnetic stand, or closes flush with stand for storage. Includes remote heat-resistant stainless steel probe that measures temperatures up to 392°F (200°C); 6" long with 4-ft FEP-insulated wire.

G Tech Board® Clipboard

Clipboard, calculator, stopwatch, and clock all in one convenient unit! Makes recording timed observations easy. Common conversion factors, Periodic Table of Elements and ruler are printed on board for quick reference.

H Tech Board® Plus Clipboard

Same as "G" above, but includes a separate stopwatch and an advanced scientific calculator with basic, algebraic, statistical, and trigonometric functions.

Specifications & Ordering Information

Catalog number	Timing modes	Timing direction	Timing resolution	Accuracy	Display	Alarm	Power	Dimensions (W x H x D)
A WD-35002-50	Single-event, start/stop, cumulative split	24 hours up	0.01 sec up to 30 min, then 1 sec up to 24 hrs	±5 to 8 sec/day	6-digit LCD, 5/16"H digits	One minute when set to sound at specific time; brief chime when set to chime on hour.	One 1.5 V battery (included)	1¼" x 2⅞" x ¾"
B WD-35002-10 C WD-35002-12*	Single-event, start/stop, cumulative split	24 hours up	0.01 sec up to 30 min, then 1 sec up to 24 hrs	±5 to 8 sec/day	6-digit LCD, 5/16"H digits	One minute when set to sound at specific time; brief chime when set to chime on hour.	One 1.5 V battery (included)	2¼" x 2½" x ⅝"
D WD-35001-75 E WD-35001-78*	Single-event, start/stop, countdown timer	23 hours, 59 min, 59 sec up or down	1 second	±0.003%	Two-line LCD, 1"H digits	Continuous 70 dB beep at end of countdown. Press start/stop to stop.	One AAA battery (included)	3¾" x 5½" x 1¼"
F WD-90080-00	Countdown timer	23 hours, 59 min, 59 sec down	1 second	±2.5 sec/day	1 7/16"H split LCD shows temp, time, and set point	Beeps rapidly any time unit reaches preset temp; continuous beep when unit reaches preset time.	One AAA battery (included)	2¾" x 3¾" x 1"
G WD-35001-80	Single-event, start/stop, cumulative split	24 hours up	0.01 sec up to 30 min, then 1 sec up to 24 hrs	±8 sec/day	Two-line LCD, ¼"H digits, alphanumeric	One minute when set to sound at specific time; brief chime when set to chime on hour.	Solar cells and non-replaceable internal battery	9" x 13¾" x 1" (at clip)
H WD-35001-85	Single-event, start/stop, cumulative split	24 hours up	0.01 sec up to 30 min, then 1 sec up to 24 hrs	±8 sec/day	Stopwatch: 5-digit LCD, ¼"H Calculator: 10½-digit LCD, 5/16"H	One minute when set to sound at specific time; brief chime when set to chime on hour	One LR41 battery; two 357 batteries (included)	9" x 13¾" x 1" (at clip)

*NIST-traceable certificate included.

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